



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MID-PACIFIC REGION

SOUTH-CENTRAL CALIFORNIA AREA OFFICE
FRESNO, CALIFORNIA

FINDING OF NO SIGNIFICANT IMPACT

ACCELERATED WATER TRANSFERS AND EXCHANGES
FRIANT DIVISION CONTRACTORS
WATER YEAR 2006-2010

FONSI-05-92

Recommended:

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2/10/06
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FOR THE
ACCELERATED WATER TRANSFERS AND EXCHANGES
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INTRODUCTION

In accordance with the Section 102 (2) (c) of the National Environment Policy Act (NEPA) of 1969, as amended, the South-Central Area Office of the U.S. Bureau of Reclamation (Reclamation), has determined that the approval of an accelerated water transfer and exchange program for the CVP Contractors that have access to Friant Division Project Facilities during the 2006-2010 water year will not significantly affect the quality of the human environment. Furthermore, an environmental impact statement is not required. This Finding of No Significant Impact is supported by the attached environmental assessment which is hereby incorporated by reference.

The Federal action is the Proposed Action of the attached Environmental Assessment and is the approval of an Accelerated Water Transfer and Exchange Program for a period of five (5) years (from March 1,2006 to February 28,2011).

FINDINGS

This Finding of No Significant Impact is supported by the following factors:

1. No change in project supply: The Friant Division Contractors will continue to receive their allotted CVP project supply based upon hydrologic conditions.
2. Biological Resources: There would be no effect on biological resources as a result of the proposed action.
3. Threatened and Endangered Species: There would be no effect on any species listed pursuant to the Endangered Species Act (ESA). Although there are known listed species in the area, the transfer and exchange program will not affect critical habitat.
4. Cultural Resources: The action includes no new structures such as dams, canals, or reservoirs, construction activities, or physical changes to the environment and therefore will not affect prehistoric, historic, or traditional cultural properties.
5. Demographics and Environmental Justice: Because the proposed action is only increasing the flexibility of current operations, it will not have an adverse effect on human health or the environment, as defined by environmental justice policies and directives. The proposed action will not disproportionately affect any socio-economic or low-income groups.

6. Indian Trust Assets: No Indian Trust Assets occur within the Contractors' service areas. Therefore, no direct or indirect impacts to Indian Trust Assets would occur.

RECLAMATION

Managing Water in the West

**FINAL ENVIRONMENTAL ASSESSMENT
Accelerated Water Transfers and Exchanges
Central Valley Project Contractors
Friant Division
2006-2011**

EA-05-92

February 10, 2006

**U.S. Department of the Interior
Bureau of Reclamation
South Central California Area Office
1243 N Street
Fresno, California 93721**

SECTION 1: PURPOSE OF AND NEED FOR ACTION

1.1 Purpose of Action

To implement an accelerated water transfer program (AWTP) that facilitates efficient water management through water transfers and/or exchanges between Central Valley Project (CVP) Contractors with access to Friant Division facilities, which includes Friant Division and Cross Valley (CV) Contractors with CVP water from Friant Division (Millerton Lake) via the Madera Canal and/or the Friant-Kern Canals (FKC). The purpose of action is to facilitate efficient water management by allowing contractors within the same geographical areas to conduct annual transfers of the type historically carried out under an accelerated water transfer program which streamlines Reclamation's approval process.

1.2 Need for the Action

An AWTP is needed to reduce costs and redundant reviews associated with Reclamation's approval process. CVP Contractors within the Friant Division and CV Contractors need to relocate or shift CVP water supplies to meet irrigation (agriculture) demand or municipal and industrial (M&I) requirements.

1.3 Scope of this Environmental Analysis

The scope of this environmental assessment (EA) is to analyze the environmental effects of annual water transfers or exchanges, for the period March 1, 2006, through February 28, 2010, between CVP Contractors who receive CVP water service from Friant Division facilities. All CVP Contractors with long-term or interim water service contracts who meet the program criteria are allowed to participate in the AWTP. Appendix D contains a map of the eligible CVP Contractors in this Accelerated Water Transfer Program.

Approvals under the AWTP have been pre-determined to be made for eligible transfers and/or exchanges and that such water transfers are in compliance with Central Valley Project Improvement Act (CVPIA) Section 3405 (a). This section of the CVPIA authorizes all individuals or districts who receive CVP water under water service or repayment contracts, water rights settlement contracts or exchange contracts entered into prior to or after the date of enactment of the CVPIA, to transfer all or a portion of the water for improved water management and conservation. The AWTP allows the CVP Contractor to provide advance notice to Reclamation and then receive Reclamation's written acknowledgement rather than written approval. This analysis of the implementation of the AWTP pertains not only to water transfers of the type or kind of transfers previously carried out before the passage of the CVPIA but is expanded to include other eligible transfer/exchange actions, which have undergone previous environmental review and have been pre-determined to meet the CVPIA provisions without requiring individual review by Reclamation.

The type of exchanges of water between the contractors identified above, and analyzed in this EA, is defined as "bucket-for-bucket" or exchanges of equivalent amounts of water. Unbalanced exchanges would require additional environmental review.

1.4 Authority and Guidelines for Water Transfers:

All water transfers are subject to the following contracting authorities and guidelines as amended and updated and/or superseded:

- Title XXXIV CVPIA October 30, 1992, Section 3405 (a)
- Reclamation Reform Act (RRA), October 12, 1982, Section 226
- Long-term Water Service Contracts for Friant Division
- Interim Water Service Contracts for Cross Valley Contractors
- Long-term Water Service Contracts replacing the interim contracts for Cross Valley Contractors if approved during the term of this Environmental Assessment
- Reclamation's Interim Guidelines for Implementation of Water Transfers Under Title XXXIV of Public Law 102-575 (Water Transfer) February 25, 1993
- Reclamation and United States Fish and Wildlife Service (USFWS) Region 1, Final Administrative Proposal on Water Transfers April 16, 1998
- Reclamation's Regional Director's Letter Delegation of Regional Functional Responsibilities to the Area Offices – Water Transfers, Number 93-20 December 14, 1993

However, the environmental analysis done for this EA is not applicable to undefined conditions that may exist sometime in the future which result from amendments or updates to the implementing authority identified above. Consequently, if the finite set of conditions which formed the basis for the current analysis were to change sufficiently so as to affect the validity of the analysis, then new environmental analysis would be required.

1.5 Terms and Conditions of the Biological Opinions

In order to be exempt from the "take" prohibition of the Endangered Species Act (ESA), Reclamation must comply with terms and conditions which are pertinent to future water transfers and or exchanges within the CVP. These terms and conditions implement reasonable and prudent measures and outline mandatory reporting and monitoring. Reasonable and prudent measures are actions that the U.S. Fish and Wildlife Service believes are necessary to minimize impacts, i.e., amount of or extent, of incidental take and adverse modification or destruction of designated Critical Habitat. The Terms and Conditions of any applicable Biological Opinions shall be hereby incorporated by reference.

(USFWS, July 30, 2004) *Biological Opinion for the Coordinated Central Valley Project and State Water Project Operations Criteria and Plan (OCAP)*

(NOAA, October 2004) *Biological Opinion for the Operations Criteria and Plan*

AWTP Friant 2006-2010

EA-05-92

Admin Draft Dec 05, Revised Draft EA Jan 31, 2006, Revised Draft EA Feb 6, 2006

Final EA February 10, 2006

(USFWS, October 15, 1991, May 14, 1992 and January 19, 2001) *Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and Cross Valley Unit Contractors.*

SECTION 2: ALTERNATIVES, THE PROPOSED ACTION AND NO ACTION

2.1 Introduction

Reclamation will implement an accelerated process to approve water transfers and exchanges of the type that have occurred historically among Friant long-term CVP Contractors and CV Contractors. This EA will examine the environmental impacts to resources as a result of the proposed action and its alternatives in accordance with the Section 102 (2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended.

The EA evaluates implementation of a pre-approval process for transfers and exchanges for contract years 2006 through 2010. (A contract year begins March 1st and ends February 28th of the following year.) Each proposed transfer or exchange would be reviewed by the Contracting Officer for consistency with the project description of this EA and with all applicable permits, laws and regulations. Additional administrative and environmental reviews would be required if a proposed transfer or exchange does not comport with the project description in this EA.

2.2 Description of Proposed Action

Long Term CVP Contractors who receive Project Water service from the Friant Division would transfer or exchange up to a cumulative total 150,000 acre-feet of their CVP contract supply each year subject to the following parameters:

- Transfers or exchanges addressed in this EA are transfers or exchanges of CVP water between Long Term Contractors (Contractors) who are served by existing Friant Division facilities, all of whom are deemed to be located within the same geographical area. This includes transfers between Friant Division and CV Contractors with Friant Division water supplies. The CV Contractor's South-of-Delta supplies are excluded from this program.
- Transfers shall be of the type historically carried out among Friant Division and CV Contractors;
- Transfers that are \geq 20% of a contractor's supply must be public noticed by the Contractor prior to Reclamation's acknowledgment of such transfer.
- There will be no restriction on directionality within the AWTP – transfers do not require return transfers at a later date or year.
- Transferred water can be either Ag or M&I water.
- The ultimate purpose of use can be for Ag, M&I purposes and/or groundwater recharge.
- Annual transfers will be completed between March 1st and February 28th of the next year.
- All transfers and exchanges will be between willing sellers and willing buyers.
- Exchanges must be completed within a one-year period (365 days) from date of initial delivery of exchanged water.
- Transfers and exchanges are limited to a cumulative total of 150,000 ac-ft total annually.
- Transfers would occur without new construction or modifications to facilities.
- Transfer must occur within the existing Friant Division Permitted Place of Use.
- Transfers are limited to existing supply and will not increase overall consumptive use,

- Transfers for Ag use would be used on lands irrigated within the last three consecutive years.
- Transfers will not lead to any land conversions.
- Transfers will comply with all Federal, State, Local or Tribal law or requirements imposed for the protection of the environment and Indian Trust Resources.
- The transferee would comply with Reclamation Reform Act (RRA).
- Water for transfer may not be freed up by shifting to alternative surface water sources that could potentially adversely affect CVP operations or other third party interests.

"Transfers of the type historically carried out among CVP Contractors "shall mean transfers that are short-term transfers and of the type that historically occurred within the same year for agricultural purposes prior to enactment of PL 102-575, and those that have historically occurred for additional beneficial purposes subsequent to CVPIA, between CVP contractors located within the same geographical areas of the Project, each of whom had a long-term contract with Reclamation for CVP water service that allowed for the transfer and/or exchange of CVP water."

The Friant Contractors (for the purposes of water transfers only) are deemed to meet the criteria of Section 3405(a)(1)(M) of the CVPIA, therefore, are not required to limit their transfers to the cap of the in-district deliveries in three normal years prior to CVPIA or meeting the consumptive use criteria stated in CVPIA 3405. This determination does not address any other issues related to Friant and the area of origin statutes, and, is subject to change if relevant state law were modified. The CV Contractor's Delta supplies do not meet this section of CVPIA.

This project does not cover:

- Transfers and/or exchanges that meet the above criteria but are increments of larger actions
- Transfers and/or exchanges that involve the transfer of previously transferred and/or exchanged water
- Transfers that involve a third party intermediary as an exchanger or transferor.
- Transfers of Section "215" water
- Transfers and/or exchanges to non-CVP Contractors

2.3 Description of No Action Alternative

Under the No-Action Alternative, the amount and frequency of water transferred would likely remain near the historical average of 122,820 AF.

The No Action Alternative would be minimum implementation of an accelerated water transfer program (or another approach – the continuation of the current accelerated water transfer

program described in the Blanket Approval of Historic Temporary Transfers and Exchange of Project Water Between Friant Water Service Contractors (SCCAO EA-00-05), March 2000.

The No Action Alternative includes transfers and exchanges that are historic, routine, and are valid for a single year. The total amount of water transferred or exchanged annually would be limited to 150,000 ac-ft. The amount of water would be limited to the existing supply and would not be approved if it increased overall consumptive use. This alternative pertains to water that would have been consumptively used or irretrievably lost to beneficial use during the year of the transfer. Criteria were included that ensure no effect to threatened or endangered species or critical habitat. These criteria are required that each delivery:

- 1) Would be for irrigation purposes for lands irrigated within the last three years, groundwater recharge, and would not lead to any land conversions. Water would be delivered to existing cropland, groundwater basins, or municipal and industrial use.
- 2) Would occur within a single contract year over the five year period.
- 3) Would occur on a willing seller and willing buyer basis.
- 4) Would convey water through existing facilities with no new construction or modification to facilities and must occur between existing CVP contractors and/or the United States Department of the Interior.
- 5) Would comply with all Federal, State, Local or Tribal law or requirements imposed for protection of the environment and Indian Trust Assets.

SECTION 3 AFFECTED ENVIRONMENT

3.1 Introduction

The context for this EA is the valley floor of the San Joaquin Valley within Fresno, Kern, Madera, Merced, Tulare and Kings Counties. This section identifies the affected environment, conditions that currently exist, and the issues that may be affected by the proposed action.

An initial scoping of potential impacts that could occur as a result of implementing the Proposed Action/Project was conducted. As a result of this evaluation it was determined that several environmental issues would not be affected by the implementation of the AWTP. Therefore, the issues listed in Table 3-1 have been eliminated from further evaluation in this document. Resource issues listed in Table 3-2 are evaluated in more detail in this EA.

Table 3-1
Environmental Issues Eliminated from Detailed Assessment as a Result of Initial Evaluation

Climate and Air Quality	Recreation Resources
Soils, Geology and Mineral Resources	Aesthetic Resources
Topography	Hazardous Wastes and Materials
Noise	Public Services (fire, police protection, medical services)
Transportation/Traffic	Public Utilities (wastewater, stormwater, solid waste)
Housing	

Table 3-2

Environmental Issues Analyzed in this EA.

Biological Resources & Special Status Species	Cultural Resources
Groundwater	Indian Trust Assets
Surface Water	Environmental Justice
Land Use	

3.2 Friant Division CVP Contractors

There are 28 Long Term CVP Contractors in the Friant Division. The Contractors' service areas are located on the eastern side of the San Joaquin Valley. Water for the Friant Division comes from the San Joaquin River at Millerton Lake. From Millerton Lake, water is released into the 152 mile long Friant-Kern Canal (FKC) flowing south and the 36-mile long Madera Canal flowing north. Water conveyed to these Contractors is categorized as Class 1 and Class 2 water. Class 1 water is typically available on an annual basis and is relatively reliable while Class 2 water is only available during certain hydrologic conditions. The total Class 1 water under contract is about 800,000 acre feet (AF). Class 2 water is available as hydrologic conditions permit and totals about 1,401,475 AF under contract.

The Friant Division Contractors and their contract amounts are listed in Table 3-3 & 3.4. These Contractors have historically transferred CVP water among themselves. Table 3-5 summarizes these transfers.

Table 3-3. CVP Friant Division Contractors and Class 1 and Class 2 Contract Entitlements

Friant Division	Class 1 (AF)	Class 2 (AF)
Arvin Edison Water <u>Storage</u> District (WSD)	40,000	311,675
Chowchilla Irrigation District	55,000	160,000
<u>County of Madera</u>	200	0
Delano-Earlhart <u>Irrigation</u> District	108,800	74,500
<u>Exeter Irrigation</u> District	11,500	19,000
<u>City of Fresno</u>	60,000	0
Fresno County Waterworks #18	150	0
Fresno Irrigation District	0	75,000
Garfield Water District	3,500	0
<u>Gravelly Ford</u> Water District	14,000	0
International Water District	1,200	0
Ivanhoe Irrigation District	7,700	7,900
Lewis Creek Water District	1,450	0
<u>Lindmore Irrigation</u> District	33,000	22,000
<u>City of Lindsay</u>	2,500	0
<u>Lindsay-Strathmore</u> Irrigation District	27,000	0
Lower Tule River <u>Irrigation</u> District	61,200	238,000
<u>Madera Irrigation</u> District	85,000	186,000
<u>City of Orange Cove</u>	1,400	0
<u>Orange Cove</u> Irrigation District	39,200	0
Porterville <u>Irrigation</u> District	16,000	30,000
Sausalito Irrigation District	21,200	32,800
Shafter-Wasco Irrigation District	50,000	39,600
Southern San Joaquin <u>Municipal</u> Utility District	97,000	50,000
Stone Corral Irrigation District	10,000	0

Tea Pot Dome Water District	7,500	0
Terra Bella Irrigation District	29,000	0
Tulare Irrigation District	30,000	141,000

3.3 Cross Valley Contractors

The CV Contractors are geographically located amongst the Friant Division Contractors. There are 8 CV Contractors with an annual contract amount of 128,300 AF per year. The CV Contractors and their CVP water service contract amounts are presented in Table 3-4. Only the CV Contractor's Friant Division CVP water supplies are eligible for participation in this AWTP.

Table 3-4. Cross Valley Contractors Contract Amount

Cross Valley Contractors	CVP Maximum Contract Amount (AF)
County of Fresno	3,000
Hill Valley Irrigation District	3,346
Kern-Tulare Water District	40,000
Lower Tule River Irrigation District	31,102
Pixley Irrigation District	31,102
Rag Gulch Water District	13,300
Tri-Valley Water District	1,142
County of Tulare	5,308

The Federal water supply is delivered to the CV Contractors in the Delta of the Sacramento and San Joaquin Rivers (Delta) and is diverted by the Department of Water Resources through the Harvey O. Banks Pumping Plant of the State Water Project. The CV contracts are three party contracts whereby Reclamation provides the water supply and DWR provides the conveyance. Because the water was made available from CVP supplies it remains subject to Federal Reclamation law and CVP South of Delta allocation policy and is therefore subject to any limitations placed on CVP deliveries.

In 1975 the privately financed CV Canal was completed bringing water from the California Aqueduct (Aqueduct) near Taft, California and through a series of six pump lifts to the east side of the Valley past the city of Bakersfield. With minor exceptions, the CV Contractors cannot take direct delivery of their Delta supply. Therefore, an exchange for Friant Division water was envisioned. A Memorandum of Understanding (MOU) was entered into by the eight CV Contractors with Arvin Edison Water Storage District (AEWSD) which delineated that the Delta supplies conveyed from the Aqueduct via the CV Canal would be delivered to AEWSD and AEWSD would allow the CV Contractors to take delivery of their Friant supplies from Millerton Lake delivered via the FKC. Although the agreement did not require a bucket for bucket exchange each year due to differing historic water supply reliabilities and allocations, it was anticipated that over a 20 year period the exchange would be relatively balanced. These exchanges are addressed in Article 5 of the CV Contractors' water service contract and are not part of the AWTP.

Three of the CV Contractors no longer participate in the exchange with AEWSD. Pixley Irrigation District, Lower Tule River Irrigation District and Fresno County have discontinued the

exchange with AEWS. Lower Tule River Irrigation District and Pixley Irrigation District have transferred their water to other CVP water districts and purchase alternative supplies. Some of the other CV Contractors are proposing other exchange arrangements and those proposals are covered in separate environmental analysis.

Before passage of the CVPIA these water districts transferred or exchanged CVP water for the purpose of improved water management. Table 3-5 summarizes each districts water transfers between 1982 and 1992.

Table 3-5. Summary of Water Transfers & Exchanges 1982 to 1992 (Pre CVPIA).

District	Total Transferred/Exchanged 1982-1992 (AF)
Arvin Edison WSD	88,449
Chowchilla ID	60,000
County of Madera	20
Delano-Earlimart ID	129,193
Exeter ID	10,238
Fresno ID	9,000
Garfield WD	1,302
Gravelly Ford WD	20,898
Lindmore ID	39,498
Lindsay-Strathmore ID	94,395
Lower Tule River ID	299,837
Madera ID	65,620
Orange Cove ID	52,088
Porterville ID	75,250
Saucelito ID	26,649
Shafter-Wasco ID	79,267
Southern San Joaquin Municipal Utility District	49,369
Stone Corral ID	11,152
Tea Pot Dome WD	17,932
Terra Bella ID	91,393
Tulare ID	86,860
Total	1,308,010
Avg. over 11 years	122,820

3.4 Groundwater Resources

The Friant Division lies within the San Joaquin River and Tulare Lake ground water hydrologic region. The regions are further divided into groundwater sub-basins. Within the San Joaquin River Region, the Friant Contractors' service areas are located in the Chowchilla and Madera sub-basins. In the Tulare Lake Region, the Contractors' service areas are also located in the Kings, Kaweah, Tule and northern portion of the Kern County sub-basins.

Recharge of the semi-confined aquifers in the region is primarily derived from seepage from stream and canals, infiltration of applied water, and subsurface inflow from the Sierra Nevada Mountains. Precipitation on the valley floor provides some recharge, but only in abnormally wet years. Seepage from streams and canals is highly variable and is based on annual hydrologic conditions.

Groundwater in the San Joaquin Valley (Valley) has historically been used as a seasonal buffer to meet irrigation needs. This has led to severe groundwater overdraft in many portions of the Valley. In some areas the groundwater surface has been depressed by as much as 200 feet, which has led to ground subsidence, decreased flow in natural surface waterways and increased pumping costs for groundwater users. Water demand in the Valley often leads to water needs that are not in alignment with water deliveries to the districts. In these instances the districts either use a water transfer mechanism to obtain the necessary water, or they pump groundwater. In instances where groundwater is pumped to make up for timing delays in surface water deliveries, the groundwater is almost never fully replaced.

Conjunctive use practices are common throughout the Friant Division and the CV service areas. The practice of conjunctive use allows the water districts to have greater flexibility in meeting the demands of varied crops when water is needed by storing water when it is plentiful and utilizing groundwater supplies in dry years. Conjunctive use and groundwater banking practices typically affect groundwater resources, as these practices often lead to a reduction or halting of annual groundwater overdraft.

3.5 Surface Water Resources

The Friant Division receives CVP water from behind Friant Dam. In very rare cases, the CV Contractors could receive their supplies directly from behind Friant Dam without the need to exchange south of Delta supplies if all other Friant Division requirements are met. The CV Contractors typically receive their CVP water supplies pumped from the Delta. The CV Contractor's CVP supplies are pumped at the State of California's Banks Pumping Plant and conveyed on the state side of the California Aqueduct for ultimate delivery to turnout 12E at the Cross Valley Canal. The water is delivered to an exchanger who will exchange the water to allow for in-district delivery. Typically, the exchanger is a Friant Division Contractor that provides Friant CVP water to the CV Contractor. The exchange results in a swap of water, whereby, the Delta water is physically delivered to a Friant Division Contractor and Friant water is physically delivered to the CV Contractor. As part of the process for the long-term contracts, Reclamation conducted a needs analysis to document the beneficial use of the entire CVP contract water supply. The results of the needs analysis confirmed the ability of CVP contract quantities of water to be put to beneficial use.

3.6 Land Use

The 2001 Friant Division Long-Term Contract Renewal EA contains a more complete description of land uses in the Friant Division and is hereby incorporated by reference. The 2001 Cross Valley Contractors Long-Term Contract Renewal EA contains a more complete description of land uses and is incorporated by reference.

The Contractors involved in the Proposed Action are located in portions of Fresno, Merced, Madera, Tulare, Kings, and Kern Counties. The Contractors are comprised mainly of agricultural lands that contribute to a thriving agricultural industry. The Contractors are located in the top producing agricultural counties in the United States. Both annual and perennial crops are grown and commercial animal agriculture continues to be a growing activity. Land use changes occurring between 1993 and 2000 were analyzed for the areas covered in the project description (Young and Erysan, 2005). The greatest land use changes were from agricultural to urban, from natural to agricultural; and from natural to urban uses. Together, these land use changes

accounted for 10,970 of the 15,466 acres where land use change was indicated (Young and Erysian 2005), or about 71%.

Changes in land use are expected to continue with increased population in the state. The redistribution of people from coastal to inland areas is likely due to lower costs for housing in inland areas. This migration may lead to further reduction in natural habitats. The changes in land use that are occurring are noticeable at the periphery of urban areas where both housing and municipal development is occurring. Some changes are occurring in rural areas through conversion of natural lands (grassland) to irrigated agricultural lands.

Madera County

The County of **Madera**, Gravelly Ford Water District, **Madera** Irrigation District, **Madera** Irrigation District, and most of Chowchilla Water District are located in **Madera** County.. Located in the center of California, **Madera** County encompasses 2,147 square miles and includes the cities of Chowchilla, **Madera** and unincorporated communities of Ahwahnee, Bass Lake, Berenda, Coarsegold, Fairmead, **Madera** Ranchos, North Fork, Oakhurst, O'Neals, Raymond, and Rolling Hills. The population is 129,400 in **Madera** County. There are 977 farms in **Madera** County with an average size of 383 acres. Agriculture is the largest industry in the county, accounting for 29.9% of the employment. According to the 1997 Agricultural Census for **Madera** there were 641,546 acres in farms, a decrease from 749,465 acres five years earlier.

Merced County

A small portion of Chowchilla Water District is in Merced County. Merced County encompasses approximately 2,020 square miles and includes the six incorporated cities of **Atwater**, Dos Palos, Gustine, Livingston, Los Banos, and Merced and 18 unincorporated communities. Merced is the largest incorporated city in the county.

Merced County uses the "Urban Centered Concept" as a basic land use principle. This concept directs urban development in identified centers. Increased growth often results in a loss of the most productive agricultural soils. Under this concept, however, urban development will only occur within cities, unincorporated communities, and other urban centers. In Merced County, besides the urban area, rural areas of the county, that are typically used for cropping or pasturing activities, are subject to their own land use designations. When the general plan was developed in 1990, it was estimated that 80 percent of the population lived in the urban centers, the remaining 20 percent lived in rural areas, and 95 percent of the land in the county was considered rural.

According to the 1997 Agricultural Census for Merced County, there were 881,696 acres in farms, a decrease from 1,049,302 acres ten years earlier.

Fresno County

Fresno Irrigation District, City of Fresno, City of Orange Cove, **Garfield** Water District, International Water, District, County of Fresno, Fresno County Service Area #18, Tri Valley

Irrigation District, a portion of Hills Valley Irrigation District, and a portion of Orange Cover Irrigation District are in Fresno County.

Fresno County encompasses nearly 6,000 square miles and includes the 15 incorporated cities of Coalinga, Clovis, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier, Reedley, San Joaquin, Sanger, and Selma. Over 60 percent of the population resides in the county's two largest cities, Fresno and Clovis.

In 1997, approximately 50 percent of the county's total acreage was used for agriculture. The current land uses in Fresno County are shown on Table below.

Farming and agriculture-related businesses comprise a major component of the local economy. Factors that contribute to its success include excellent soil and climatic growing conditions and workforce and transportation availability. According to the 1997 Agricultural Census for Fresno County, there were 1,881,418 acres in farms; this represents a decrease from 1,975,373 acres in 1987.

Fresno County Land Uses (1997)

Land Use	Square Miles
Residential	152
Commercial	7
Industrial	11
Agricultural	2,911
Resource Conservation ¹	2,691
unclassified ²	11
Incorporated Cities	154
Total	5,937

Source: Fresno County General Plan (County of Fresno

2000a, 2000b)

¹Including national forests, parks and timber preserves

²Includes streets, highways and rivers

Kings County

Atwell Water District is partially located in Kings County. Atwell Water District is a

subcontractor to the County of Tulare. Located in the southern half of the Central Valley, Kings County encompasses 1,392 square miles. The county includes the four incorporated cities of Hanford, Lemoore, Corcoran, and Avenal. Approximately 67 percent of the county's population lives in the incorporated cities (Kings County Planning Department 1993).

Kings County's economy has been dominated by agriculture and related industries since its formation in 1893. Kings County has consistently ranked among the top counties in the nation in the production of cotton, barley, and alfalfa seed. The county also produces 39 crops or products, including milk, cattle, and turkeys, that gross over \$1 million per year. According to the 2002 Census of Agriculture for Kings County (National Agricultural Statistics Services 2002c), there were 645,598 acres in farms, a 2 percent decrease from 661,363 acres in 1997. There were also 1,154 farms in Kings County, a 5 percent decrease from 1,215 farms in 1997 (National Agricultural Statistics Services 2002c).

Information on land available for urban development in Kings County is shown in the Table below:

Kern County

Arvin Edison Water Storage District, Delano-

Earlimart Irrigation District, Shafter-Wasco

Irrigation District, Southern San Joaquin Municipal

Utility District. Kern Tulare Water District and Rag;

Gulch Water District is located in Kern County.

Kern County is the third-largest county in

California encompassing approximately 8,170

square miles and includes Arvin, California City, Maricopa, McFarland, Ridgecrest, Shafter, Tehachapi and the City of Bakersfield. None of the cities receive CVP M&I water supplies.

Land Available in Kings County for Urban Development in 1993

Land Use	Acres
Residential	1,696
Commercial	634
Industrial	1,003
Total	3,333
Source: Kings County Planning Department 1993	

Kern County's economy is dominated by agriculture with 2,731,341 acres incorporated into farms. Kern County has consistently ranked among the top counties in the nation in agricultural production with the main produce being wheat, cotton and forage crops. Similar to the statewide trend, the County's agriculture areas are facing increasing pressure to convert productive farmland to housing, industrial, and commercial development. The County of Kern's General Plan Land Use, Open Space, and Conservation Element incorporates policies and programs that recognize the importance of agriculture and the necessity to manage this resource for future use. The planning document also recognizes that tax and economic incentives, available markets, and water are important factors to ensuring the long-term retention of agricultural use. The continued existence of large, contiguous areas of agricultural zoning, Williamson Act and Farmland Security Zone Programs, and the County's adopted Right-to-Farm/Right-to-Business Resolutions acknowledge agriculture's importance to the County.

Kern County's population is expected to exceed 1,088,600 people by the year 2020. The Land Use, Open Space, and Conservation Element of the Kern County's General Plan incorporates policies and implementation measures that are designed to avoid unplanned growth and premature farmland conversion. Measures incorporated in this planning document include provisions to evaluate agriculture and resource land conversion proposals to ensure that premature and unplanned urban development does not occur.

Tulare County

The City of Lindsay, Exeter Irrigation District, Ivanhoe Irrigation District, Lewis Creek Water District, Lindmore Irrigation District, Lindsay-Strathmore Irrigation District, Lower Tule River Irrigation District, Porterville Irrigation District, Saucelito Irrigation District, Frasinetto Farms (formerly Smallwood Vineyards), Stone Corral Irrigation District, Tea Pot Dome Irrigation District, Terra Bella Irrigation District, Tulare Irrigation District, Strathmore Public Utility

District, Styrotek, Inc, City of Visalia, Pixley Irrigation District, Lower Tule River Irrigation District and portions of Orange Cove Imgation District, Delano-Earlimart Irrigation District,

Kern Tulare Water District, Rag Gulch Water District, Atwell Water District and Hills Valley Irrigation District are in Tulare County.

Centrally located, Tulare County encompasses approximately 4,863 square miles and includes the cities of Dinuba, Cutler, Orosi, Three Rivers, Woodlake, Visalia, Exeter, Farmersville, Lindsay, Tulare, Porterville and Earlimart. The City of Visalia is the only potential M&I recipient of CVP water as a subcontractor of the County of Tulare who is a CVP contractor. Mountain peaks of the Sierra Nevada range rise to more than 14,000 feet in its Eastern half. Meanwhile, the extensively cultivated and very fertile valley floor in the Western half, has allowed Tulare County to become the second-leading producer of agricultural commodities in the United States. In addition to substantial packing / shipping operations, light and medium manufacturing plants are increasing in number and are becoming an important factor in the County's total economic picture.

Tulare County, with a population of approximately 397,000, is located in the San Joaquin Valley, the center of California. Tulare County is also recognized as the largest agricultural-producing county in the world and ranks number one in the state, as well as the nation, for total milk production with 1,393,456 acres in agricultural production in 2002. Tulare County agribusiness is dynamic and reflects the changing demands of consumer and export markets. The county's agribusiness alone produces over \$3 billion dollars, an increase of 5% since 1998.

3.7 Wildlife and Special Status Species

An unofficial list of endangered, threatened, and sensitive species that may occur within the San Joaquin Valley floor (action area) of Fresno, Madera, Tulare, Kings and Kern Counties was obtained from the USFWS's Endangered Species Lists website at http://sacramento.fws.gov/es/spp_list.htm. Additional data was obtained from the California Department of Fish and Game's California Natural Diversity Database (CNDDB) website at <http://www.dfg.ca.gov/whdab/html/cnddb.html>.

Land use changes have occurred in the districts over the last 20 years. These changes are primarily due to the population growth of the State of California as a whole. Land has been converted from rangeland in many of the districts, with more change occurring near the population and transportation hubs (Bakersfield and Fresno). Land conversion to municipal use has been encouraged by the local governments for the last decade and has been taking place primarily without the use of CVP water.

Species of Concern

Twenty-five federally listed threatened and endangered wildlife and plant species are included on USFWS species list for the study area. Critical habitat is currently designated within the proposed project area for the vernal pool fairy shrimp, valley elderberry longhorn beetle, delta smelt, California tiger salamander, California red-legged frog, Buena vista lake shrew, Fresno kangaroo rat, fleshy owls clover, San Joaquin Valley orcutt grass, Hairy orcutt grass and greene's tuctoria.

COMMON NAME	SCIENTIFIC NAME	STATUS
ANIMALS		
California Tiger Salamander	<i>Ambystoma californiense</i>	Threatened
Vernal pool fairy shrimp	<i>Brachinecta lynchi</i>	Threatened
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened
Giant kangaroo rat	<i>Dipodomys ingens</i>	Endangered
Tipton kangaroo rat	<i>Dipodomys nitratoides nitratoides</i>	Endangered
Fresno kangaroo rat	<i>Dipodomys nitratoides exilis</i>	Endangered
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened, Proposed Delisted
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	Endangered
Vernal pool fairy shrimp	<i>Lepidurus packardii</i>	Threatened
Central Valley steelhead	<i>Onchorhynchus mykiss irideus</i>	Threatened
California red-legged frog	<i>Rana aurora draytonii</i>	Threatened
Giant garter snake	<i>Thamnophis gigas</i>	Threatened
Buena Vista Lake shrew	<i>Sorex ornatus relictus</i>	
San Joaquin kit fox	<i>Vulpes macrotis macrotis</i>	Endangered
PLANTS		
Fleshy owl's-clover	<i>Castilleja campestris</i> spp. <i>Succulenta</i>	Threatened
California jewel-flower	<i>Caulanthus californicus</i>	Endangered
Kern mallow	<i>Eremalche kernensis</i>	Endangered
San Joaquin woollythreads	<i>Monolopia congdonii</i>	Endangered
Bakersfield cactus	<i>Opuntia basilaris</i> var <i>treleasei</i>	Endangered
San Joaquin Valley Orcutt grass	<i>Orcuttia inaequalis</i>	Threatened
Hairy Orcutt grass	<i>Orcuttia pilosa</i>	Endangered
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	Endangered
San Joaquin sunburst	<i>Pseudobahia peirsonii</i>	Threatened
Greene's tuctoria	<i>Tuctoria greenei</i>	Endangered

ANIMALS

Species accounts and habitat requirements are described in Appendix C.

3.8 Cultural Resources

The Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. After Spanish and Mexican incursions in the early 19th century, coupled with the introduction of European born epidemics, Native American populations declined and became culturally extinct in the San Joaquin Valley by the mid-19th

century. The extent of cultural studies in the San Joaquin Valley has been limited. The conversion of land and intensive farming practices over the last century has probably destroyed many Native American cultural sites.

3.9 Indian Trust Assets

The environmental context and setting of this environmental assessment is restricted to lands within the Friant Division Permitted Place of Use. Any area outside of this place of use is not included in this analysis and will not receive water from this proposed action.

Indian Trust Assets (ITA) are legal interests in property or rights held in trust by the United States for Indian Tribes or individual Native Americans. Trust Status originates from rights imparted by treaties, statutes, or executive orders. Such assets cannot be sold, leased, or otherwise alienated without federal approval.

Indian reservations, rancherias, and allotments are common (ITA). Allotments are parcels of land held in trust for specific individuals that may be located outside reservation boundaries. In addition, such assets include the right to access certain traditional areas and perform traditional ceremonies. There are no ITAs in Kern County. Within 20 miles of the Contractors service areas there are approximately 20 public domain allotments (PDAs) located in Madera, Fresno and Tulare counties. The PDAs, owned by native Americans, are small parcels of land that are frequently held in trust. Any land held in trust for native Americans whether PDA or rancheria, is an ITA.

3.10 Environmental Justice

The project area is located within the top 10 producing agricultural counties in the United States. The farming practices provide employment opportunities for mainly low income wage earners that are commonly from disadvantaged population groups. Small communities within the project area provide homes for these farm laborers.

SECTION 4 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This section of the EA analyzes the effects of the Proposed Action and No Action Alternatives to the resource issued identified in Table 3.2.

4.2 Groundwater Resources

As stated in Section 3.4 some farmers in the project area use groundwater to make up for water delivery timing delays, for decreased water deliveries due to dry hydrologic conditions and/or to meet peak demands. Groundwater can be pumped by individual landowners and is not regulated. In wet years, groundwater is recharged via deliberate man induced efforts. Throughout the northern and central portions of the action area there has been a significant amount of subsidence over the last century due to excessive groundwater overdraft.

Under the Proposed Action, the delivery of transferred water will reduce the need for an amount of groundwater pumping in individual districts. It should be noted that the districts involved in the project are receiving water from the same source and all overlie the same aquifer. Groundwater pumping can deplete the already compromised aquifer, while delivery of transferred in surface water can offset the need for groundwater pumping and improve the quality of the water applied to agricultural lands or for M&I purposes. Since the aquifer is interconnected beneath all districts involved and the overall water supply available to the contractors collectively is not changing, delivery of water in a manner which has occurred historically would not impact the groundwater aquifer but may slightly improve localized groundwater level depressions.

The No Action Alternative also envisions an Accelerated Water Transfer Program operating under the same parameters as were implemented in past years. The past program anticipates transfers between the same districts up to a higher transfer volume of 150,000 ac-ft per year. Since the annual average of water transferred in total (which is a larger pool of transfers than those under the AWTP) is less than 150,000 ac-ft, the cap allowed in the Proposed Action will not negatively impact any positive effect that flexibility in water transfers within the same geographic area would afford.

Impacts on groundwater and groundwater levels under both the Proposed Action and the No Action Alternative are anticipated to be the same.

This action may reduce groundwater pumping slightly on a localized basis throughout the action area, however; cumulatively this action will have only a minor effect on the current management and use of groundwater resources in the project area due to the short duration of the action. This analysis indicates that future projects, including future water transfer projects, may improve CVP water supply reliability and reduce the need for groundwater withdrawals. These types of programs will modify water supply reliability but not change long-term CVP deliveries from within the historical ranges within the geographic area as this action will not alter the overall water supply in the area.

The No Action Alternative will result in continued groundwater pumping in order to meet specific crop demands. The No Action Alternative will not alter current groundwater management and use in the project area.

Cumulatively this action will have only a minor effect on the current management and use of groundwater resources in the project area.

4.3 Surface Water Resources

Surface water is the primary supply of water for both agricultural and M&I uses in the action area. Although some districts have supplies of non-CVP water supplies, the vast majority of the Contractors rely on CVP water as their primary surface water supply. Under both the Proposed Action and the No Action Alternative, flexibility and ease of transferring CVP supplies will result in water supplies moving to the highest beneficial or economic use. Water districts typically have the following water management related goals:

- Avoid long-term overdraft by achieving a balanced groundwater budget
- Create a sufficient water supply for all uses
- Integrate groundwater management with use of CVP and other surface water supplies as available
- Include conjunctive use as a groundwater management tool as geologic conditions allow
- Maintain and enhance groundwater recharge and maximize groundwater recharge as geologic conditions allow
- Create a distribution system to fully utilize all water supplies
- Create sufficient recharge capacity, demand, or storage to fully utilize available CVP water supplies
- Avoid or correct groundwater levels that are too low to support existing wells or too high to protect the root zone or prevent groundwater recharge
- Provide water supplies that meet drinking water quality standards to municipalities (as applicable)
- Prevent contamination of groundwater from spills, leaks, confined animal feeding operations, and stormwater runoff
- Minimize long-term dissolved solids concentrations in groundwater
- Maximize cropland preservation
- Develop cooperative agreements between water agencies and land use planning agencies
- Monitor groundwater characteristics

Working toward achieving the above objectives (as appropriate and applicable to each district) would be defined as good water management from the perspective of the water districts. The Proposed AWTP streamlines the transfer approval process and facilitates efficient water management by allowing water transfers of the type historically carried out among CVP Contractors located within the same geographical area to continue to be implemented under an accelerated approval process. It is highly unlikely that a district would allow the transference of water that could be put to the highest beneficial and economic use within the district. Proposals of transfer greater than 20% of the contractor's contractual supply either individually or

cumulatively must be noticed for public review. Water transferred under this project would be water that the district made available due to farm economic decisions and cropping pattern decisions on the landowner/farmer level. These decisions are made looking at the profitability of the potential crop and the overall farm operations. Water transference also occurs due to weather and hydrologic conditions (i.e. planned irrigation need is offset by rainfall freeing up water supplies that were planned to be utilized) and or timing of allocation increases and or conveyance availability. The supply transferred under the Proposed Action and the No Action Alternative will not affect water supply diversions from Millerton Lake or the Delta since this is the same water supply allocated to the districts and applied to the same geographic area where the districts are located. No new facilities would be built nor water diverted that would not otherwise would have been diverted. Although surface water deliveries to individual contractors could increase or decrease under both the Proposed Action and the no-action alternative, this change is driven by the land use needs. Since the individual district has control over the transfer of the water and since it is a reasonable assumption that a district would not make adverse water management decisions for the good of the district landholders, the surface water supplies within each district would not be negatively impacted from the standpoint of needed water deliveries or "good water management." The Proposed Action would not cause any additional water to be diverted from non-project sources therefore it will not impact non-CVP related surface water supplies.

Surface water resources under the Proposed Action in the action area would be identical to conditions under the No Action Alternative. The Proposed Action would not alter CVP operations, water storage or release patterns from CVP facilities, or the maximum volume of water delivered to the Contractors as compared to the No Action Alternative.

The Proposed Action would not result in cumulative adverse impacts to surface water resources, quality, or facilities when considered in combination with future projects. This analysis indicates that future projects, including future water transfer projects, may 'improve CVP water supply reliability for individual districts but does not change the net CVP water deliveries in the geographic area. These types of programs would modify water supply reliability but not change long-term CVP contract amounts or deliveries from within the historical ranges.

4.4 Land Use

It is not expected that transfers or exchanges of water within one year will cause land use changes among the Contractors and transfers or exchanges causing land use changes are precluded from both the Proposed Action and the No Action Alternative. These transfers and exchanges will facilitate the completion of crop production in a single growing season based on cropping patterns established early in the contract year and/or will allow continued irrigation of high value permanent crops to prevent investment losses in the trees or vines involved. These transfers or exchanges will also prevent crop revenue loss and will be driven by the economics or the value of the potential crop loss compared to the cost of the water obtained however they will not drive the development of new farm land or M&I infrastructure as they are of short duration.

Neither of the alternatives includes new facilities or construction. It is anticipated that growth would continue to occur as described in the county general plans and as projected by the Department of Finance with protections for the environment. CVP contract water supplies have been incorporated into water supply plans of most Contractors for the last 40 years or more and

temporary one-year transfers will not drive land use decisions formulated by the entities with the land use approval decision making authority. This authority is usually held by the counties or the cities. These agencies are mandated to meet anticipated growth addressed in county general plans. Typically the responsibility to address effects to land uses would be with the local government as part of their California Environmental Quality Act compliance for their actions. The general plans assume that growth would continue with or without the CVP water service contractual supplies based upon the ability to use existing supplies and to acquire or develop alternative long term supplies. Temporary transfers may assist existing M&I development to weather dry water years with less restrictions but are not long term supplies for future permanent development.

For example, Reclamation is not responsible for the development of housing tracts or industrial development in a community. Such actions are approved locally and at the state level (However, other federal agencies, such as Housing and Urban Development, may be involved.). Further, if a farmer changes from one irrigated crop to another because of economic reasons, Reclamation does not control the farmer's decision. On the other hand, Reclamation would need to consider the effects to land uses and changes when Reclamation acknowledges lands being detached or brought into an irrigation district.

It should be noted that the temporary transfers envisioned within the contracts are not the factor driving growth and land use change. Demographic, economic, political, and other factors, independent of the long-term contract process and transfer and exchange approvals are causing changes with direct and indirect effects to land use that are beyond the range of Reclamation's responsibilities. With little exception, virtually all of the transfer approval actions are within the range of existing conditions. This includes the area of use, types of use, range of river flows, and reservoir fluctuations. No additional infrastructure would be constructed, no increase in total deliveries, and no conversion of existing natural habitat into farmland or other uses.

The No Action Alternative is the same as the Proposed Action with regard to land use impacts. The same amount of water would be applied to support existing lands uses.

The temporary transfers and exchanges under the Proposed Action would not result in cumulative adverse impacts to land use resources when considered in combination with future projects. Analysis indicates that future projects, including future water transfer projects, may improve CVP water supply reliability. These types of programs would modify temporary water supply reliability but not change long-term CVP contract amounts or deliveries from within the historical ranges. Therefore, land use would not change under either of the alternatives.

A project would not cause a secondary growth impact unless the growth would not occur without the project. Most CVP Contractors have no land use jurisdiction in the counties. The cities who are Contractors have more land use decision making authority. The counties and cities have the ability and obligation to ensure that development occurs without harm to sensitive habitat and cultural resources. It should also be noted that the purpose of the project is to allow temporary redistribution of water supplies within the action area under a streamlined approval process. The project is not designed to improve water supply reliability or water facility capacity. The implementation of the Proposed Action would not change regional growth forecasts as compared to the No Action Alternative.

4.5 Wildlife and Special Status Species

Under the proposed action, transferred water would be used to temporarily make up for shortages in supply and improve timing of deliveries. The limited duration of this supply precludes its use as a reliable source of water. Conversion of native land into agriculture use requires a reliable water supply. Therefore there would be no loss of native habitat for wildlife species and no affect to listed species or critical habitat. Moreover, the use of transfer and exchange water has been covered and analyzed in the Friant Biological Assessment (BA) and the Friant Division Long-Term Contract Renewal Regional Biological Opinion (BO) issued by the USFWS in 2001. The BO concluded that fish and wildlife species of concern were not likely to be jeopardized as a result of the Long Term Contracts.

This action would not result in any impacts to source districts, as the transfers and exchanges would be in response to climatic conditions, crop requirements, economics, or water delivery timing issues. These factors are not under the control of the farmers and must be dealt with on an annual basis. By providing a means for water delivery flexibility, this action would help preserve the farming practices of the source areas as well as the receiving areas. Under the conditions of this Proposed Action there will be no third party water used to free up the CVP water being transferred or exchanged.

Neither alternative includes any new facilities or construction. It should be noted that temporary water transfers or exchanges are not factors driving growth and land use change. Demographic, economic, political, and other factors, independent of transfers and exchanges, are causing changes with direct and indirect effects to biological resources that are beyond the range of Reclamation's responsibilities. All of the transfer and exchange actions are within the range of existing conditions. This includes the area of use, types of use, range of river flows, and reservoir fluctuations. No additional infrastructure would be constructed, there would be no increase in deliveries, and no conversion of existing natural habitat into farmland or other uses.

In some instances the responsibility to address affects to biological resources would be with the local government as part of their California Environmental Quality Act compliance for their actions. For example, Reclamation is not responsible for the development of housing tracts or industrial development in a community. Such actions are approved locally and at the state level (However, other federal agencies, such as Housing and Urban Development, may be involved.). Further, if a farmer changes from one irrigated crop to another because of economic reasons, Reclamation does not control the farmer's decision. On the other hand, Reclamation would need to consider the effects to biological resources when Reclamation approves new lands being brought into an irrigation district and when Reclamation approves a change in use.

The Department of the Interior is developing strategies to address the impacts upon special status species in the CVP service areas. In addition, any federal action that may affect listed species must comply with Endangered Species Act. This requirement for compliance is also required for other Federal approvals and permits, including Corps of Engineers permits for dredging and filling of wetlands. This type of regulatory compliance is required for several federal actions and would be included in the overall local planning process.

The Proposed Action would be identical to conditions for biological resources under the No Action Alternative. The Proposed Action would not alter CVP operations, water storage or release patterns from CVP facilities, or the maximum volume of water delivered to the Contractors as compared to the No Action Alternative. Therefore, biological resource conditions under the Proposed Action would be identical to those under the No Action Alternative.

Reclamation has **determined** the transfers and exchanges of this CVP water would have no effect on federally listed threatened and endangered species. Diversions from Millerton Lake would not change. The Proposed Action would not interfere with other management decisions for the Friant Division facilities.

The transfers and exchanges are water management actions to support existing uses and conditions. No native lands would be cultivated. Lands fallowed for three or more years would require surveys for wildlife species including threatened and endangered species prior to application of this water. Subsequent environmental review and consultations, if applicable would be required to irrigate lands fallowed three or more years. Therefore, the Proposed Action would have no effect on federally listed threatened or endangered species or their designated habitats.

The No Action Alternative will result in continued transfers and exchanges of water that are approved on a case by case basis. As such the impacts would be the same as described under the Proposed Action. There would be no impacts to fish and wildlife, listed species or critical habitat.

Cumulatively this action will have a no effect on fish and wildlife in the project area. Transfers and exchanges under the Proposed Action would not result in cumulative impacts to biological resources in addition to those occurring under the affected environment in the baseline case. These issues were evaluated as part of previous environmental documentation. It is not foreseen that land use plans and resource conservation plans would change without additional environmental documentation.

4.6 Cultural Resources

This Proposed Action will not result in the conversion or disturbance of additional land or the impact any known cultural sites. No cultural resources in the action area would be impacted based on the Proposed Action which from an "on the ground perspective" there is no change in action from the No Action Alternative. The project description ensures that no new lands will be put into production with this water. Further, if a **farmer** changes from one irrigated crop to another because of economic reasons within already tilled farmland, this should not have any impact on cultural resources.

Cultural resources under the Proposed Action would be identical to conditions under the No Action Alternative. The Proposed Action would not alter CVP operations, water storage or release patterns from CVP facilities, or the maximum volume of water delivered to the Contractors as compared to the No Action Alternative.

The No Action Alternative will not result in the conversion of additional land or the impact any known cultural sites.

The cumulative effect of future programs with the AWTP would modify temporary water supply reliability but not change long-term CVP contract amounts or deliveries from within the historical ranges.

4.7 Indian Trust Assets

There are no tribes possessing a legal interest held in trust by the United States in the CVP water targeted for transfer or exchange. The Proposed Action will not interfere with Indian water rights decisions or alter the manner in which water is delivered to Indian Trust Assets, and as such will have no impact on Indian Trust Assets within the scope of this action.

The No Action Alternative will not alter the manner in which water is delivered to Indian Trust Assets, and as such will have no impact on Indian Trust Assets within the scope of this action.

4.8 Environmental Justice

This action will increase the flexibility of water deliveries to the contractors. This increased flexibility may lead to a further diversification of crops within these districts. This could lead to a shift in the timing needs of farm labor during the year the Proposed Action would occur, however the need for farm labor is not expected to change as a result of this action.

The No Action Alternative will not change the flexibility of water deliveries to the contractors covered. Therefore the No Action Alternative will have no impact on environmental justice.

SECTION 5: CONSULTATION AND COORDINATION

Fish and Wildlife Coordination Act (16 USC 651 et seq.)

The Fish and Wildlife Coordination Act requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The implementation of the CVPIA, of which this action is a part, has been jointly analyzed by Reclamation and the FWS and is being jointly implemented. This continuous implementation and consideration of the views of the FWS satisfies any applicable requirements of the FWCA.

Endangered Species Act (16 USC 1521 et seq.)

Section 7 of the Endangered Species Act requires federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of federally endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has completed consultation for the Operations and Criteria and Plan (OCAP) that included the pumping and conveyance of the Cross Valley Contractor's CVP water and coordination of operations of the CVP and SWP.

Reclamation has determined the transfers, exchanges and conveyance of this CVP water would have no effect on threatened and endangered species and no further consultation is required under Section 7 of the Endangered Species Act. This determination is based on the transfers and exchanges would not change pumping conditions in the Delta to protect fish. Reclamation and DWR would continue to make decision whether to pump and convey this water based on external conditions independent of the transfers and exchanges. Water is pumped from the Delta in accordance with the OCAP and other regulatory requirements to protect fish and water quality resources. Similar amounts of water are pumped and conveyed DWR based on demands and capacity although the label on the water may differ.

The transfers and exchanges are water management actions to support existing uses and conditions. No native lands would be cultivated. Lands fallowed for three or more consecutive years would require surveys for wildlife species including threatened and endangered species prior to application of this water. Subsequent environmental review and consultations, if applicable would be required to irrigate lands fallowed three or more years. Therefore, the Proposed Action would have no effect on federally listed threatened or endangered species or their designated habitats.

NATIONAL HISTORIC PRESERVATION ACT (15 USC 470 et seq.)

Section 106 of the National Historic Preservation Act requires federal agencies to evaluate the effects of federal undertakings on historical, archaeological and cultural resources. Due to the nature of the proposed project, there will be no effect on any historical, archaeological or cultural resources, and no further compliance actions are required.

References

(Reclamation, October 1999) *Final Programmatic Environmental Impact Statement for the Implementation of the Central Valley Project Improvement Act*

(Reclamation, April 1, 1997) *Blanket Approval of Temporary Transfers and Exchanges of Project Water Between Friant Division Contractors During the Interim Period*

(Reclamation, January 19, 2001) *A Finding of No Significant Impact and final Environmental Assessment, Cross Valley Unit Long Term Contract Renewal*

(Reclamation, January 19, 2001) *A final Environmental Assessment, Friant Division Long Term Contract Renewal*

(USFWS, October 15, 1991, May 14, 1992 and January 19, 2001) *Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and Cross Valley Unit Contractors.*

(Reclamation, March 2000) *A Finding of No Significant Impact and final Environmental Assessment, Blanket Approval of Historic Temporary Transfers and Exchanges of Central Valley Project Water Between Friant Water Service Contractors*

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Appendix A

Water Deliveries for the Three Normal Years Prior to CVPIA: Analysis for Friant Division

The three normal years prior to CVPIA enactment for the Friant Division has been determined to be 1975, 1979 and 1984. These years were the latest years prior to CVPIA to have fallen within 20% plus or minus of the normal water supply predicted for the San Joaquin River watershed upstream of Friant Dam based on review of the natural river flows from 1913 through 2003. The average natural river flow for this period was 1.7 million acre-feet (macft). The natural river flow was 1.796 macft, 1.830 macft and 2.043 macft respectively for the years 1975, 1979 and 1984. Additionally the Class 2 declaration was reviewed.

Reclamation has determined that a 48% Class 2 declaration is would be a "normal" declaration. Looking at the same three years the Class 2 declarations are 60%, 63% and 50% respectively for 1975, 1979 and 1984.

Friant Districts	1975 Deliveries ac-ft	1979 Deliveries. ac-ft	1984 Deliveries. ac-ft (from WSR)	Average ac-ft
Arvin Edison Water Storage District 40,000 AF Class 1 311,675 AF Class 2	202,661	149,502 - CVC deliveries included	128,115 • CVC deliveries included	160,093
Delano-Earlimart ID 108,800 AF Class 1 74,500 AF Class 2	169,806	156,542	159,714	162,021
Exeter ID 11,500 AF Class 1 19,000 AF Class 2	19,145	19,178	20,342	19,555
Fresno County Water Works #18 150 AF Class 1	112	102	59	91
Fresno ID 0 AF Class 1 75,000 AF Class 2	78,365	34,177	67,633	60,058
Garfield WD 3,500 AF Class 1 0 AF Class 2	3,422	3,471	2,668	3,187
Gravelly Ford WD 14,000 AF Class 2	Data In Development	Data In Development	Data In Development	Data In Development
International WD 1200 AF Class 1 0 AF Class 2	1,381	1,747	1,301	1,476
Ivanhoe ID 7,700 AF Class 1 7,900 AF Class 2	12,585	12,841	10,641	12,022
Lewis Creek WD 1,450 AF Class 1 0 AF Class 2	1,283	2,245	2,082	1,870
Lindmore ID 33,000 AF Class 1 22,000 AF Class 2	51,006	49,454	52,649	51,036
Lindsay- Strathmore ID 27,500 AF Class 1 0 AF Class 2	14,091	16,686	19,068	16,615
Lower Tule River ID* 61,200 AF Class 1 238,000 AF Class 2	214,283	243,816	208,069	222,056
County of Madera	12	10	20	14

Admin Draft Dec 05, Revised Draft EA Jan 31, 2006, Revised Draft EA Feb 6, 2006

Final EA February 10, 2006

200 AF Class I				
Orange Cove ID	35,856	36,760	38,729	37,115
39,200 AF Class 1				
0 AF Class 2				
Porterville ID	25,568	23,741	24,377	24,562
16,000 AF Class 1				
30,000 AF Class 2				
Saucelito ID	41,687	42,417	39,637	41,247
21,200 AF Class 1				
32,800 AF Class 2				
Shafter-Wasco ID	74,223	62,819	73,423	70,155
50,000 AF Class 1				
39,600 AF Class 2				
Southern San Joaquin Municipal ID	141,473	132,838	131,203	135,171
97,000 AF Class 1				
50,000 AF Class 2				
Stone Corral ID	9,001	10,141	9,202	9,448
10,000 AF Class 1				
0 AF Class 2				
Tea Pot Dome WD	4,960	5,214	6,655	5,610
7,500 AF Class 1				
0 AF Class 2				
Terra Bella ID	19,310	20,260	21,981	20,517
29,000 AF Class 1				
0 AF Class 2				
Tulare ID*	199,761	176,226	112,005	162,664
30,000 AF Class 1				
141,000 AF Class 2				
City of Fresno	23,000	31,000	63,073	39,024
60,000 AF Class 1				
0 AF Class 2				
City of Lindsay	Not listed (n/l)	840	938	889
2,500 AF Class 1				
0 AF Class 2				
City of Orange Cove	453	494	639	529
1,400 AF Class 1				
0 AF Class 2				
Chowchilla WD	128,865 (WSR)	154,089 (WSR)	130,984	137,979
55,000 AF Class 1				
160,000 AF Class 2				
Madera ID	188,949 (WSR)	195,975 (WSR)	179,798	188,241
85,000 AF Class 1				
186,000 AF Class 2				

Data for the Cross Valley Contractors is still in development.

ac-ft = acre-foot

Appendix B

Water Transfer Summary

The table below is a summary of past approved water transfers in the project area. Pre-CVPIA is from contract year (CY) 1982 to CY 1991. Post-CVPIA is from CY 1992 to CY 2003. A negative number in the right hand column signifies more water transfer out of the district than transferred in within the time frame evaluated.

Pre-CVPIA is from WY 1982 to WY 1991.

Post-CVPIA is from WY 1992 to WY 2003

	AF of Water Transfer Out		AF of Water Transfer In	Net Acre-Feet Transferred In
Arvin-Edison WSD				
Total Pre-CVPIA	90,312	Total Pre-CVPIA	262,744	172,432
Total Post-CVPIA	362,910	Total Post-CVPIA	106,588	-256,322
Chowchilla WD				
Total Pre-CVPIA	60,000	Total Pre-CVPIA	1,797	-58,203
Total Post-CVPIA	28,000	Total Post-CVPIA	22,740	-5,260
City of Fresno				
Total Pre-CVPIA	0	Total Pre-CVPIA	0	0
Total Post-CVPIA	12,047	Total Post-CVPIA	547	-11,500
City of Lindsay				
Total Pre-CVPIA	5,247	Total Pre-CVPIA	0	-5,247
Total Post-CVPIA	0	Total Post-CVPIA	0	0
City of Orange Cove				
Total Pre-CVPIA	0	Total Pre-CVPIA	0	0
Total Post-CVPIA	1,637	Total Post-CVPIA	947	-690
County of Fresno				
Total Pre-CVPIA	0	Total Pre-CVPIA	0	0
Total Post-CVPIA	2,100	Total Post-CVPIA	650	-1,450
County of Tulare				
Total Pre-CVPIA	0	Total Pre-CVPIA	0	0
Total Post-CVPIA	994	Total Post-CVPIA	34,641	33,647
Delano-Earlimart ID				
Total Pre-CVPIA	129,193	Total Pre-CVPIA	61,673	-67,520
Total Post-CVPIA	141,059	Total Post-CVPIA	56,922	-84,137

Exeter ID

AWTP Friant 2006-2010

EA-05-92

Admin Draft Dec 05, Revised Draft EA Jan 31,2006, Revised Draft EA Feb 6,2006
Final EA February 10,2006

Total Pre-CVPIA	9,588	Total Pre-CVPIA	5,603	-3,985
Total Post-CVPIA	33,261	Total Post-CVPIA	1,450	-31,811
Fresno County Waterworks #18				
Total Pre-CVPIA	0	Total Pre-CVPIA	20	20
Total Post-CVPIA	100	Total Post-CVPIA	52	-48
Fresno ID				
Total Pre-CVPIA	9,000	Total Pre-CVPIA	13,138	4,138
Total Post-CVPIA	78,204	Total Post-CVPIA	61,165	-17,039
Garfield WD				
Total Pre-CVPIA	1,302	Total Pre-CVPIA	200	-1,102
Total Post-CVPIA	8,145	Total Post-CVPIA	2,920	-5,225
Gravelly Ford WD				
Total Pre-CVPIA	20,898	Total Pre-CVPIA	0	-20,898
Total Post-CVPIA	0	Total Post-CVPIA	0	0
Hills Valley ID				
Total Pre-CVPIA	950	Total Pre-CVPIA	250	-700
Total Post-CVPIA	400	Total Post-CVPIA	21,000	20,600
International WD				
Total Pre-CVPIA	0	Total Pre-CVPIA	1,600	1,600
Total Post-CVPIA	588	Total Post-CVPIA	526	-62
Ivanhoe ID				
Total Pre-CVPIA	0	Total Pre-CVPIA	7,328	7,328
Total Post-CVPIA	3,000	Total Post-CVPIA	4,200	1,200
Kern-Tulare WD				
Total Pre-CVPIA	48,434	Total Pre-CVPIA	18,117	-30,317
Total Post-CVPIA	65,147	Total Post-CVPIA	41,511	-23,636
Lewis Creek WD				
Total Pre-CVPIA	0	Total Pre-CVPIA	2,666	2,666
Total Post-CVPIA	550	Total Post-CVPIA	2,307	1,757
Lindmore ID				
Total Pre-CVPIA	39,498	Total Pre-CVPIA	45,194	5,696
Total Post-CVPIA	40,341	Total Post-CVPIA	46,683	6,342
Lindsay-Strathmore ID				
Total Pre-CVPIA	89,495	Total Pre-CVPIA	8,124	-81,371
Total Post-CVPIA	72,485	Total Post-CVPIA	20,126	-52,359
Lower Tule River ID				
Total Pre-CVPIA	298,392	Total Pre-CVPIA	99,360	-199,032
Total Post-CVPIA	278,744	Total Post-CVPIA	97,400	-181,344

Madera ID

Total Pre-CVPIA	65,620	Total Pre-CVPIA	48,960	-16,660
Total Post-CVPIA	8,131	Total Post-CVPIA	22,970	14,839

Orange Cove ID

Total Pre-CVPIA	52,088	Total Pre-CVPIA	16,394	-35,694
Total Post-CVPIA	69,747	Total Post-CVPIA	4,008	-65,739

Orange Cove ID

Total Pre-CVPIA	8,731	Total Pre-CVPIA	9,672	941
Total Post-CVPIA	69,747	Total Post-CVPIA	4,008	-65,739

Pixley ID

Total Pre-CVPIA	56,131	Total Pre-CVPIA	29,000	-27,131
Total Post-CVPIA	290,493	Total Post-CVPIA	134,826	-155,667

Porterville ID

Total Pre-CVPIA	77,750	Total Pre-CVPIA	3,500	-74,250
Total Post-CVPIA	134,538	Total Post-CVPIA	1,223	-133,315

Rag Gulch ID

Total Pre-CVPIA	0	Total Pre-CVPIA	5,800	5,800
Total Post-CVPIA	23,811	Total Post-CVPIA	15,230	-8,581

Saucelito ID

Total Pre-CVPIA	26,649	Total Pre-CVPIA	17,255	-9,394
Total Post-CVPIA	21,776	Total Post-CVPIA	26,212	4,436

Shafter-Wasco ID

Total Pre-CVPIA	79,267	Total Pre-CVPIA	30,785	-48,482
Total Post-CVPIA	97,272	Total Post-CVPIA	26,417	-70,855

SSJMUD

Total Pre-CVPIA	49,369	Total Pre-CVPIA	40,683	-8,686
Total Post-CVPIA	73,896	Total Post-CVPIA	25,640	-48,256

Stone Corral ID

Total Pre-CVPIA	12,152	Total Pre-CVPIA	4,815	-7,337
Total Post-CVPIA	14,845	Total Post-CVPIA	2,600	-12,245

Tea Pot Dome WD

Total Pre-CVPIA	17,351	Total Pre-CVPIA	6,522	-10,829
Total Post-CVPIA	4,601	Total Post-CVPIA	237	-4,364

Terra Bella ID

Total Pre-CVPIA	85,523	Total Pre-CVPIA	16,379	-69,144
Total Post-CVPIA	98,785	Total Post-CVPIA	5,776	-93,009

Tri-Valley WD

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Total Pre-CVPIA	0	Total Pre-CVPIA	125	125
Total Post-CVPIA	571	Total Post-CVPIA	5.195	-4,824
Tulare ID				
Total Pre-CVPIA	86,860	Total Pre-CVPIA	206,660	-119,800
Total Post-CVPIA	462,444	Total Post-CVPIA	98,304	-384,140
Total Transfers	3,920,169		1,859,385	
Total Pre-CVPIA	1,419,800	Total Pre-CVPIA	964,364	
Total Post-CVPIA	2,500,369	Total Post-CVPIA	895,021	

Appendix C

Brief Threatened and Endangered Species Accounts

California Tiger Salamander (*Ambystoma californiense*)

Federal Status: Threatened; State Status: None

Species Description: The California tiger salamander is a large and stocky terrestrial amphibian with small eyes and broad, rounded snout that utilizes both aquatic and upland habitats during its lifespan. While individuals may survive for more than 10 years, many breed only once; in some populations, less than 5 percent of marked juveniles survived to become breeding adults (Trenham 1998b in USFWS 2004a). The salamander larvae, being among the top aquatic predators in the seasonal pool ecosystem, feed on zooplankton, small crustaceans, and aquatic insects for approximately 6 weeks after hatching, after which they switch to larger prey (Anderson 1968). The frequent occurrence of midge larvae (Chironomidae) in their guts suggests a tendency to feed at or near surficial bottom sediments. Larger larvae have been known to consume smaller tadpoles of Pacific treefrogs (*Hyla regilla*) and California red-logged frogs (*Rana aurora draytonii*) in addition to many aquatic insects (Anderson 1968). The adult salamander's diet is not well known but may include insects, isopods, mollusks and worms (Dodson and Dodson 1971).

Reproduction and Development: The adult salamanders primarily breed and lay eggs in vernal pools and other seasonal ponds following rains in November to February (Twitty 1941; Shaffer and Fisher 1991; Shaffer et al. 1993a; Petranka 1998). After breeding, adults leave the pool and return to small mammal burrows (Loredo et al. 1996; Trenham 1998a in USFWS 2004a), although they may continue to come out nightly for approximately the next two weeks to feed (Shaffer et al. 1993b). Salamander eggs hatch in 10 to 14 days with newly hatched aquatic salamanders (larvae). The larvae obtain oxygen through gills and through the skin. The larvae probably rest in contact with pond bottom mud during part of the day, and are known to bury themselves in the mud when pursued. The larval stage of the salamander usually lasts 3 to 6 months (based on seasonal ponds and pools drying up) (Petranka 1998). Metamorphosed juveniles leave their ponds in the late spring or early summer and settle in small mammal burrows (Zeiner et al. 1988 in USFWS 2004a; Shaffer et al. 1993a; Loredo et al. 1996). Like adults, juveniles may emerge from these retreats to feed during nights of high humidity (Storer 1925; Shaffer et al. 1993a) before settling in their selected aestivation sites for the dry, hot summer months. Juveniles do not typically return to the breeding pools until they reach sexual maturity at several years of age (Trenham 1998b in USFWS 2004a).

Habitat: California tiger salamander breeding and aestivation habitat includes vernal pools, and seasonal and perennial ponds and surrounding upland areas in grassland and oak savannah plant communities from sea level to about 1,067 meters (m) (3,600 feet (ft)) (Shaffer et al. 1993a; Jennings and Hayes 1994 in USFWS 2004a; Petranka 1998; CNDDDB 2003; Bobzien in litt. 2003; USFWS 2004c). The survival and viability of this species is directly related to availability of breeding ponds with hydrological and other factors conducive to the salamander's reproduction. Sub-adult and adult California tiger

salamanders spend the dry summer and fall months of the year aestivating in the burrows of small mammals (Storer 1925; Loredó-Prendeille et al 1996; Petranka 1998; Trenham 1998a in USFWS 2004a). Once rains begin, they emerge from their burrow at night to feed and migrate to breeding ponds.

Critical Habitat: On August 10, 2004, USFWS published a proposed designation of critical habitat for the Central California population of California tiger salamanders (USFWS 2004b). The proposed rule contains approximately 382,666 acres of federal, state/county, and private land in 4 regions in central and coastal California, with 47 individual units among those four regions.

Vernal pool fairy shrimp (*Branchinecta lynchi*)

Status: Threatened

Habitat requirements and distribution in the San Joaquin Valley: This species is a small anostracan crustacean that inhabits ephemeral pools and swales. It is widely distributed across the Central Valley from Shasta County to Tulare County, and in intermountain valleys of the central and southern Coast Ranges, but is uncommon throughout its range (Eng et al., 1990 cited in USFWS 2003a). This species requires clear-water, rain-filled pools in sandstone and basalt-flow depressions, grassy swales, and earth slumps (Eriksen and Belk 1999). It also can occur in agricultural furrows on sites of former vernal pools (R. Arnold, pers. comm. 2001). Like other vernal pool crustaceans, this species has a rapid growth and reproductive cycle timed to the short period of inundation in winter and early spring. *B. lynchi* develops more quickly than many other Central Valley fairy shrimp, and the pools this species dwells in are typically shorter-lived than those inhabited by other Central Valley fairy shrimp (Eriksen & Belk 1999). They can hatch within a few days after their pools fill with water and reproduce within a few weeks after hatching (Eriksen and Belk 1999). The fertilized eggs develop into embryos that form dormant cysts. These cysts are highly resistant to desiccation and temperature extremes, and can survive many years in dry pool bottoms. This species is threatened primarily by loss of vernal pool habitat to agriculture and urban development.

Valley elderberry longhorn beetle (*Desmocerus californicus* dimorphus)

Status: Threatened

Habitat requirements and distribution in the San Joaquin Valley: This species occurs in riparian woodland and shrub habitats of the San Joaquin River and other watercourses of the valley. It depends entirely on its host plant, the blue elderberry (*Sambucus mexicana*), which is a common component of the remaining riparian forests and adjacent upland habitats of the Central Valley. The beetle's range extends throughout the Valley and surrounding foothills to about the 3,000-foot elevation contour on the east and the watershed of the Central Valley on the west (USFWS 1999). It prefers mature, stressed elderberry plants 2-8 inches in diameter and stems greater than one inch diameter (BioSystems Analysis 1994, CDFG 2004). Its life cycle takes one or two years to complete. The larvae grow and feed within the stems, trunk and roots, and emerge

through characteristic oval-shaped exit holes. Adult emergence is from late March through June, about the same time the elderberry produces flowers. The species is threatened primarily by destruction of its habitat for agriculture, urban development and flood control.

Giant kangaroo rat (*Dipodomys ingens*).

Federal Status: Endangered; State Status: Endangered.

Historically, the Giant kangaroo rat occurred in the Tulare Basin and in the adjacent Carrizo Basin and Cuyama and Panoche Valleys. This distribution closely coincides with the distribution of marine sediment-derived soils on the southern and western edges of the San Joaquin Valley (Williams 1992). Conversions of grasslands to agriculture and other land uses have resulted in 98% loss of habitat suitable for the Giant kangaroo rat (Williams 1992). The species is found in less than 2% of its historical range, in small, widely scattered colonies in areas such as the Panoche and Cuyama Valleys, Carrizo and Elkhorn Plains, and the upper Buena Vista Valley in the Elk Hills (Williams 1980).

Loss of habitat to agriculture and other land-modifying actions is the primary reason for the decline of this species. This decline is still continuing with habitat loss still the main threat to this species (CDFG 1987). Intensive livestock grazing and the use of rodenticides may contribute to the continued decline (Williams 1992). This species is in general non-migratory and therefore not likely to invade on highly disturbed or cultivated fields. There is low probability they would occupy lands that are in agricultural production or have been fallowed for less than two years.

Tipton kangaroo rat

Federal Status: Endangered; State status: Endangered.

The Tipton kangaroo rat is one of three geographically separated subspecies of San Joaquin kangaroo rat (*Dipodomys nitratoideus*), the other being the Fresno kangaroo rat (*D. nitratoideus exilis*) and the Short-nosed kangaroo rat (*D. nitratoideus brevinasus*) (Brylski and Roest 1994, Brylski et. al 1994, USFWS 1998). Fresno and Tipton kangaroo rats once occupied contiguous geographic ranges within the Tulare Basin and the southeastern half of the San Joaquin Basin in the San Joaquin Valley (USFWS 1998). Tipton kangaroo rats occupy arid land communities on alluvial fan and floodplain soils having level or near-level topography with elevated soil structures such as mounds, berms, or embankments or burrows (Brylski et. al. 1994, USFWS 1998).

Fresno kangaroo rat (*Dipodomys nitratoideus exilis*)

Status: Endangered

Habitat requirements and distribution in the San Joaquin Valley: This subspecies of San Joaquin kangaroo rat historically occurred in the central San Joaquin Valley from Fresno County to Merced County (BioSystems Analysis 1994, CDFG 2004). It occurs in alkali marsh and other relatively bare areas with clay-rich, alkaline soil. Fresno kangaroo rats use burrows for shelter and reproduction, which are typically located in friable soil mounds around shrubs and grasses. Nearly all of its former habitat has been converted to irrigated farmland, and the species has not been found on cultivated or fallow cropland.

(BioSystems Analysis 1994). The last recorded sighting of Fresno kangaroo rat was in 1992 at Alkali Sink Ecological Reserve. It has not been found despite intensive field surveys since 1992 and may now be extinct (Kelly and Phillips 2004).

Bald eagle (*Haliaeetus leucocephalus*)

Status: Threatened, Proposed Delisted

Habitat requirements and distribution in the San Joaquin Valley: The bald eagle lives along lake shores, reservoirs, rivers and other large water bodies which it requires for foraging. It feeds mainly on fish and waterfowl, which may be taken live or scavenged (CDFG 2004). Bald eagles nest in tall trees, often found in mixed conifer or ponderosa pine forests, and always near large water bodies. They may also nest in hardwoods, depending on tree size and structure. Nests are usually built at or near the top of mature trees with accessible crowns for take-off and landing (Lehman 1979). Snags and dead-topped trees provide perch and roost sites for the nesting birds. Breeding bald eagles in California tend to be year-round residents of their nesting territories, but many birds from out of state, as well as non-breeding eagles, migrate to and winter in lowlands of California (BioSystems Analysis 1994). Bald eagles winter throughout the proposed action area (CDFG 2002) but are relatively uncommon in Fresno and Madera counties (Fresno Audubon Society 2000). Bald eagle populations were reduced primarily by shooting, habitat loss, and poisoning by pesticides, but have recovered substantially in recent years following the ban of the pesticide DDT and other protection efforts (BioSystems Analysis 1994). In 1999, the USFWS proposed delisting the bald eagle.

Blunt-nosed leopard lizard (*Gambelia sila*)

Status: Endangered

Habitat requirements and distribution in the San Joaquin Valley: This species is a relatively large iguanid lizard that occurs in scattered, undeveloped areas on the Valley floor, particularly in the southern and western San Joaquin Valley and adjacent valleys in the Coast Ranges (CDFG 2002). It inhabits open, sparsely-vegetated areas in arid grassland, scrub, and playas, and frequently seeks refuge in small mammal burrows (Stebbins 2003). It prefers flat terrain and tends to avoid dense or tall herbaceous cover that restricts vision for foraging and escape from predators (Warrick et al. 1998). It is threatened primarily by habitat loss and increased human presence, but is also affected by overgrazing and rodent control. Those lands where the species still exists are often heavily grazed or treated with pesticides, both of which have been shown to have detrimental effects on the species (Germano and Williams 1992).

Vernal pool tadpole shrimp (*Lepidurus packardii*)

Federal Status: Endangered; State Status: None.

Vernal pool tadpole shrimp are a member of the aquatic crustacean order Notostraca. Adults possess 35 pairs of legs and two long cercopods, and may reach a length of two inches. Vernal pool tadpole shrimp are restricted to vernal pool/swales and ephemeral freshwater areas. The life history of the vernal pool tadpole shrimp is linked to the phenology of the vernal pool habitat. The vernal pools have a very low conductivity, total dissolved solids, and alkalinity. These pools are located most commonly in grass-

bottomed swales of grasslands in old alluvial soils underlain by hardpan or in mud-bottomed pools containing highly turbid water. It has also been observed in stock ponds and other seasonal wetlands.

After winter rainwater fills the pools, the populations are reestablished from diapaused eggs that lie dormant in the dry pool sediments. The vernal pool tadpole shrimp matures slowly and is long lived so the adults are often present and reproductive until the pools dry up in spring. The vernal pool tadpole shrimp often occurs with the vernal pool fairy shrimp (USFWS 2003).

Unlike fairy shrimp, vernal pool tadpole shrimp swim with their legs down, climb on objects, and plow through sediments on the pool bottom (USFWS 1994). Their omnivorous diet contributes to the importance of their ecological role within vernal pool communities. Vernal pool tadpole shrimp consume detritus, earthworms, mollusks, dead tadpoles, frog eggs, fairy shrimp, and a variety of other invertebrates and microorganisms (Pennak 1989, USFWS 1994).

Female tadpole shrimp produce up to six clutches of eggs per season, yielding more than 800 eggs in all, which are deposited on vegetation at the bottom of the pool. A portion of the eggs will hatch immediately while the rest enter diapause (dormancy). Adults remain present and reproductively active until the pools evaporate. Like fairy shrimp, the population survives through the dry summer months as diapaused eggs in the pool sediment. Some of these eggs will hatch when the pool fills with water in subsequent seasons, while the remaining eggs remain in the sediment (USFWS 1994). Eggs contained within the sediment at any given point can represent eggs deposited from several breeding seasons. Vernal pool tadpole shrimp reach maturity 3 to 4 weeks after initial inundation of the vernal pool. Service has developed standard survey protocols for wet and dry seasons to determine the presence or absence of this species in vernal pool habitats.

The vernal pool tadpole shrimp's diet, dispersal mechanisms, and ability to withstand disturbance are believed to be similar to those of the longhorn and vernal pool fairy shrimp. No recovery plan has been developed for this species, nor has critical habitat been designated. The conservation efforts for this species are the same as those previously discussed for the longhorn and vernal pool fairy shrimp.

Historic and Current Distribution

The species is endemic to vernal pools throughout the Central Valley and is found in suitable habitats in the Central Valley from Shasta County to northern Tulare County, and in the central coast range from Solano County to Alameda County. The species inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. The vernal pool tadpole shrimp is known from 18 populations in the Central Valley, ranging from east of Redding in Shasta County south through the Central Valley to the San Luis National Wildlife Refuge in Merced County and from a single vernal pool complex located on the San Francisco Bay National Wildlife Refuge in the City of

Fremont, Alameda County (50 CFR Part 17). The vernal pool tadpole shrimp inhabits vernal pools that contain clear to highly turbid water and range in size from 6 square yards in the Mather Air Force Base area of Sacramento County to the 89-acre Olcott Lake at Jepson Prairie.

Reasons for Decline and Threats to Survival

The loss of vernal wetlands is the primary cause for the decline of the vernal pool tadpole shrimp. Service estimated that 90 percent of the suitable habitat for these species has been destroyed by human activities (e.g., commercial and residential development, agricultural development, off-road vehicle use, water development projects, and flood control projects). Habitat has been lost not only from direct destruction and modification of vernal pools, but also from alterations in vernal pool watersheds caused by modification of surrounding uplands (USFWS 1994.). The vernal pool tadpole shrimp was listed as Endangered by Service in 1994 largely because of the significant threats associated with future habitat loss and fragmentation (USFWS 1994).

Central Valley steelhead (*Onchorhynchus mykiss* irideus)

Status: Threatened

Habitat requirements and distribution in the San Joaquin Valley: Steelhead trout are anadromous, salmonid fish that migrate through Central Valley rivers and creeks en route to spawning grounds in the Sierra foothills and mountains. Adult Central Valley steelhead generally begin returning from the ocean to enter fresh water in early fall, and hold in downstream areas until flows are high enough in tributaries for spawning (Moyle 2002). They usually spawn during winter in high-gradient, upper reaches of tributaries in cool, well-aerated water. After hatching, steelhead usually stay in fresh water for one to two years. Juveniles can occupy a variety of in-stream habitats that provide adequate cover, food supply, and cold water temperatures (Moyle 2002). The species formerly was much more abundant and widespread in the Valley, but historic runs have been all but eliminated by dam construction and water diversions. These activities have blocked steelhead from their historic spawning grounds and have also substantially reduced downstream flows. In the San Joaquin basin, spawning steelhead now appear to be limited to a small population in the lower Stanislaus River (Yoshiyama 1999, unpublished data cited in Moyle 2002).

California red-legged frog (*Rana aurora draytonii*)

Status: Threatened

Habitat requirements and distribution in the San Joaquin Valley: This frog lives in and near permanent sources of deep water, including perennial ponds, freshwater marshes and backwater areas of streams (Jennings and Hayes 1994). It prefers quiet water areas with pools at least two feet deep and dense riparian or emergent vegetation (Hayes and Jennings 1988, cited in USFWS 2002), but can also occur in artificial ponds that lack emergent vegetation (Scott and Rathbun *in litt.* 1998, cited in USFWS 2002). California red-legged frogs often rest and feed in riparian vegetation close to water, and can disperse through upland habitats far from water, especially on rainy nights during winter. The species historically occurred in the San Joaquin Valley (Jennings and Hayes 1994), but

may never have been widespread on the Valley floor (USFWS 2002). Its populations were severely reduced by hunting and are now threatened by habitat loss and introduction of exotic predators.

Giant garter snake (*Thamnophis gigas*)

Status: Threatened

Habitat requirements and distribution in the San Joaquin Valley: This aquatic snake inhabits freshwater marshes, low-gradient streams, canals, and irrigation ditches in the northern Valley as far south as Mendota. During its active season in spring and summer, it occurs predominantly in aquatic habitats and adjacent, dense marsh and riparian vegetation. From late October to late March, it takes refuge above the high-water line in abandoned rodent burrows and other subterranean refuges (BioSystems Analysis 1994; CDFG 2002). The species formerly had a more widespread latitudinal distribution in the Central Valley. It is threatened by wetland and waterway alteration, development, and exotic fishes (BioSystems Analysis 1994).

San Joaquin kit fox (*Vulpes macrotis mutica*)

Status: Endangered

Habitat requirements and distribution in the San Joaquin Valley: This subspecies once inhabited most of the San Joaquin Valley from Kern County north to San Joaquin County (Grinnell et al. 1937, cited in USFWS 1998). It typically occurs in arid grassland and scrub habitats, including alkali and saltbush scrub (BioSystems Analysis 1994). San Joaquin kit foxes require dens for shelter and reproduction, and prefer areas with friable soil for excavating dens. They may also use dens constructed by other animals, or use human-made structures such as culverts or abandoned pipelines (B. Cypher pers. comm., cited in USFWS 1998). Kit foxes often change dens and may use several dens throughout the year. In the southern part of its range, they feed mostly on kangaroo rats (*Dipodomys* spp.), pocket mice (*Perognathus* spp.), white-footed mice (*Peromyscus* spp.), and other nocturnal rodents (USFWS 1998). They are subject to predation by coyote (*Canis latrans*) and other larger carnivores. The largest extant population of kit foxes in the Valley is in western Kern County, but they may also occur in scattered areas of natural habitat in Fresno and Madera counties (USFWS 1998). The species has disappeared from much of its former range as natural habitat has been converted to agriculture and urban development. Kit fox populations are becoming increasingly disjunct and fragmented (Koopman et al. 2000). In some areas, kit foxes have adapted to agricultural and even urban environments that provide sufficient food, den sites, and protection from predators (Cypher and Frost 1999).

Plants

Brief summaries are provided below for the ten federally listed plants included on the USFWS species list for the study area.

Fleshy owl's-clover (*Castilleja campestris* ssp. *succulenta*)

Status: Threatened

Description of species, habitat and distribution in the San Joaquin Valley: Fleshy owl's

clover is a hemiparasitic annual plant in the snapdragon family (Scrophulariaceae). It is between two and ten inches tall and produces yellow flowers during April and May. Fleshy owl's clover is endemic to vernal wetland habitats in the eastern San Joaquin Valley at elevations from 80 to 2,300 feet (USFWS 2003a). It is found most often in vernal pools on alluvial terraces and tends to favor mildly to strongly acidic soils (USFWS 2003a). There are 63 documented extant locations, scattered primarily in seven vernal pool complexes between northern Fresno County and San Joaquin County (USFWS 2003a).

California Jewel-flower (*Caulanthus californicus*)

Federal Status: Endangered; State Status: Endangered; CNPS list 1B

This annual herb occurs in chenopod scrub and in valley and foothill grassland habitats. The blooming period extends from February to May. The current range of this species includes Fresno and Kern Counties. Historic records are known from Kings and Tulare Counties, but the plant is believed to be extirpated from these areas (CNPS 1994). Twenty-four CNNDDB occurrences of California jewel have been reported within Tulare, Kings, Kern, and Fresno Counties as of April 2002.

Suitable valley and foothill grassland habitat for this species is present from the valley floor to the lower elevation foothills of the Sierra Nevada. In addition, suitable chenopod scrub habitat is present within historic lakebeds with heavy, saline and/or alkaline clays in portions of the action area, particularly in the southern San Joaquin Valley. Sensitive habitat in which this species occurs includes valley sink scrub, which is an element of chenopod scrub (Holland 1986). Most of this habitat has been extirpated due to flood control, agriculture development and groundwater pumping.

Kern mallow (*Eremalche kernensis*)

Federal Status: Endangered; State Status: None; CNPS list 1B

This annual herb occurs in chenopod scrub, and valley and foothill grassland habitats. The blooming period extends from March to May. The range of this species is limited to Kern County. The CNDDDB reports that observations occurred between 1938 and 1995, between the elevations of 230 and 1,700 feet. Many observations occurred in the Lokem and Semitropic quadrangle areas.

Suitable valley and foothill grassland containing eroded hillsides, and chenopod scrub within alkali flats are present in portions of the action area, particularly in the southern San Joaquin Valley. Sensitive habitat in which this species occurs includes valley sink scrub, which is an element of chenopod scrub (Holland 1986). Most of this habitat has been extirpated due to flood control, agriculture development, and groundwater pumping (Holland 1986). This species is threatened by agriculture development and grazing (Hickman 1993).

San Joaquin Woolly-Threads (*Lembertia condonii*).

Federal Status: Endangered; State Status: None; CNPS list 1B

This annual herb occurs in chenopod scrub, and in valley and foothill grassland habitats. The blooming period extends from March to May. The range of this species includes Fresno and Kern Counties. Historic records are known from Kings and Tulare Counties, but the plant is believed to be extirpated from these areas (CNPS 1994).

Suitable sandy valley and foothill grassland and chenopod scrub within lakebeds of heavy saline and/or alkaline clays are present in portions of the action area, particularly towards the southwest San Joaquin Valley. Sensitive habitat in which this species occurs includes valley sink scrub, which is an element of chenopod scrub (Holland 1968). Most of this habitat has been extirpated due to flood control, agriculture development and groundwater pumping.

Bakersfield Cactus (*Opuntia basilaris* var. *treleasei*).

Federal Status: Endangered; State Status: Endangered; CNPS list 1B.

This shrub occurs in chenopod scrub habitat and sandy soils within valley and foothill grassland habitat. The blooming period is May. The range of Bakersfield cactus is limited to Kern County. Recorded occurrences range in elevation between 290 and 1,800 feet.

Suitable valley and foothill grassland and chenopod scrub forming arid plains are present in portions of the action area, particularly towards the southeast San Joaquin Valley. This species is threatened by agriculture and grazing (Hickman 1993).

San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)

Federal Status: Threatened

Description of species, habitat and distribution in the San Joaquin Valley:

San Joaquin Valley Orcutt grass is a grayish-green aromatic annual, two to six inches tall, in the grass family (Poaceae). It grows at least a few months underwater and occurs exclusively in vernal pool and swale habitats in the northeastern San Joaquin Valley from Tulare to Stanislaus counties, between 155 and 2,475 feet in elevation (USFWS 2003a). It blooms from April to September, as the vernal wetlands are drying, and requires undisturbed habitat into the late spring and summer months. San Joaquin Valley Orcutt grass generally grows in larger pools, presumably because these dry out later in the season (CDFG 2004).

Hairy Orcutt grass (*Orcuttia pilosa*)

Status: Endangered

Description of species, habitat and distribution in the San Joaquin Valley: Hairy Orcutt

grass is a densely tufted annual, from two to eight inches tall, in the grass family (Poaceae). It blooms between May and September and grows exclusively in vernal pool habitats within the Sacramento and San Joaquin valleys, at elevations ranging between 180 to 405 feet (USFWS 2003a). In the San Joaquin Valley, it historically occurred in

widely scattered locations within Stanislaus, Madera, and Merced counties. Hairy Orcutt grass is generally found in vernal pools on stream terraces and alluvial fans (Stone et al. 1988).

Occurrence potential in the Action Area: Low. There are no historic location records for hairy Orcutt grass within the Action Area or in Fresno County (CDFG 2004). No suitable habitat for this species currently exists within the Action Area.

Occurrence potential in the one-mile buffer area: High. One recorded location occurs approximately 0.75 mile north of the Action Area northeast of Herndon. This occurrence was last documented in the CNDDDB in 1986 (CDFG 2004), and is presumed to be extant based on the presence of intact habitat. There are also two extant occurrences recorded from a vernal pool complex north of Little Dry Creek, approximately two miles northwest of the North Growth Area (CDFG 2004).

Hartweg's golden sunburst (*Pseudobahia bahiifolia*).

Federal Status: Endangered; State Status: Endangered; CNPS list 1B.

Description of species, habitat and distribution in the San Joaquin Valley: Hartweg's golden sunburst is a yellow-flowered annual, two to eight inches tall, in the aster family (Asteraceae). It blooms in March and April and is generally found at elevations of less than 500 feet. Hartweg's golden sunburst often occurs on the upper, north-facing slopes of mima mounds associated with vernal pools, and it is also found in mesic sites such as shady creekbeds and north-facing slopes (Stebbins 1991, cited in Vollmar 2002). Historically, it is believed to have ranged across the eastern Central Valley from Fresno to Yuba counties, but now it is only known from two concentrations: one near the Fresno-Madera county line and a second in Merced and Stanislaus counties.

San Joaquin adobe sunburst (*Pseudobahia peirsonii*)

Federal Status: Threatened

Description of species, habitat and distribution in the San Joaquin Valley: San Joaquin adobe sunburst is a yellow-flowered annual, four to eighteen inches tall, in the aster family (Asteraceae). It blooms in March and April and occurs at elevations between 100 and 1,000 feet. It is entirely restricted to heavy adobe clay soils and its current range includes Fresno, Tulare and Kern counties in the eastern San Joaquin Valley.

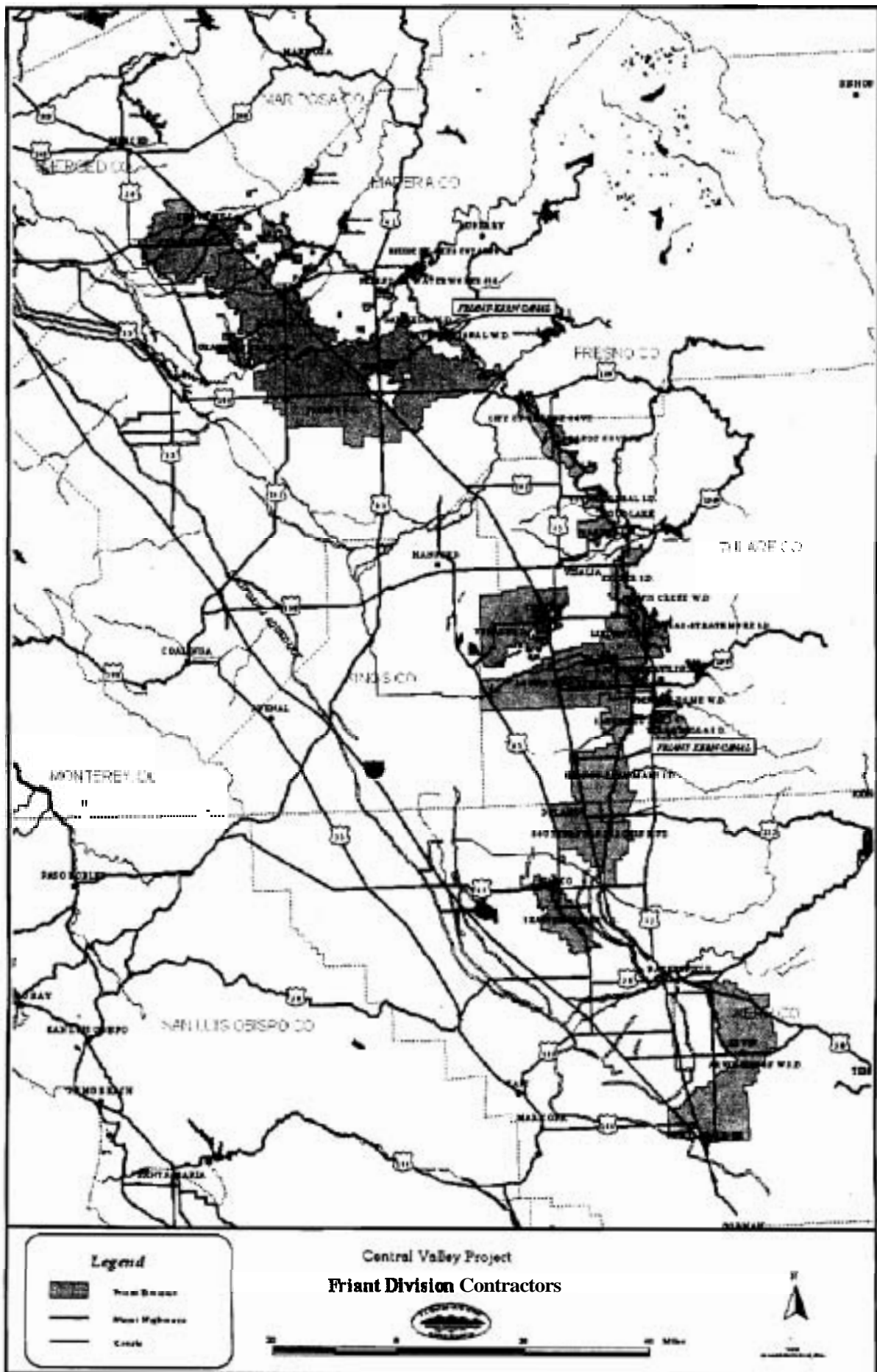
Greene's tuctoria (*Tuctoria greenei*)

Status: Endangered

Description of species, habitat and distribution in the San Joaquin Valley: Greene's tuctoria is a tufted annual grass, two to six inches tall, in the grass family (Poaceae). It is documented from elevations between 110 to 440 feet and blooms between May and July. It often grows in shallower vernal pools, which dry in April or early May (Stone et al. 1988). Greene's tuctoria historically occurred in the Sacramento and San Joaquin valleys. However, in the San Joaquin Valley it is believed to be extirpated entirely from Fresno, Madera, San Joaquin, and Stanislaus counties and only remains in Merced County, where there are seven extant occurrences (CDFG 2004).

Appendix D

Map of the Friant Division and Cross Valley Contractors



*Please file with
EA-05-92*

SEA-05-92



**SUPPLEMENTAL
ACCELERATED WATER TRANSFER PROGRAM
FRIANT
2006-2010**

South-Central California Area Office

Date: March 20, 2006

To: Repayment Specialist	SCC 415 <i>[Signature]</i>	B Hidleburg	3/20/06
Environmental Specialist	SCC 416 <i>[Signature]</i>	L Silva	3120106
Biologist	SCC 423 <i>[Signature]</i>	N Gruenhagen	3120106
Chief, Resource Division	SCC 400 <i>[Signature]</i>	K Wood	3120106
Deputy Area Manager	SCC 102 <i>[Signature]</i>	M Jackson	3120106

Cost Authority Number

From: Lynne Silva

Subject: Review and signing of EA

Please review the attached EA/FONSI and sign. Route according to the order on the list. If you have comments or questions please contact Lynne Silva or the proponent of the action. When everyone has signed **please return it to Lynne.**

Thank you.

Ready for Central Files

LS 3/20/06

*1 Copy for B. Hidleburg
1 Copy for J. Tepic
2 Copies M.P. 3730
1 Copy to NEPA (Shane)*

**U.S. DEPARTMENT OF THE INTERIOR
U.S. BUREAU OF RECLAMATION
FINDING OF NO SIGNIFICANT IMPACT
SUPPLEMENTAL ACCELERATED WATER TRANSFER PROGRAM
SEA-05-92
2006-2010**

Recommended:


Environmental Protection Specialist
South-Central California Area Office

3/20/06

Date

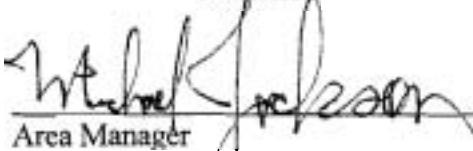
Concur:


Chief, Resource Management Division
South-Central California Area Office

3/20/06

Date

Approval


Area Manager
south-central California Area Office

3/20/06

Date

FINDING OF NO SIGNIFICANT IMPACT

In accordance with section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, the U.S. Bureau of Reclamation (Reclamation) has determined that an Environmental Impact Statement (EIS) is not required for the Accelerated Water Transfer Program. Reclamation has prepared the Finding of No significant Impact (FONSI), which is supported by the attached Supplemental Environmental Assessment (SEA) for the AWTP. The SEA is hereby incorporated by reference. Reclamation finds that the project will not have any significant impacts to the human environment.

Proposed Action

Reclamation proposes to increase the amount of water covered and allowed under the existing AWTP for water years 2006-2010 to 255,000 acre feet. Project water can be transferred for any purpose recognized as beneficial under applicable State law.

Alternative Consideration

Reclamation considered three alternatives in the SEA, and has determined that no significant impacts to the quality of the human environment would result from any. This conclusion is based on the following.

This Finding of No Significant Impact is supported by the following factors:

1. No change in project supply: The Friant/Cross Valley Contractors will continue to receive their allotted CVP project supply based upon hydrologic conditions and environmental concerns.
2. Biological Resources: There would be no effect on biological resources as a result of the proposed action.
3. Threatened and Endangered Species: There would be no effect on any species listed pursuant to the Endangered Species Act (ESA). Although there are known listed species in the area, the transfer and exchange program will not affect critical habitat. Overall water supplies are not changing. Existing water supplies would be redistributed to meet crop demands on existing agricultural lands in the same geographical area. This water would be diverted with or without the transfers and exchanges as in the past.
4. Cultural Resources: The action includes no new structures such as dams, canals, or reservoirs, construction activities, or physical changes to the environment and therefore will not affect prehistoric, historic, or traditional cultural properties.
5. Demographics and Environmental Justice: Because the proposed action is only increasing the flexibility of current operations, it will not have an adverse effect on human health or the environment, as defined by

environmental justice policies and directives. The proposed action will not disproportionately affect any socio-economic or low-income groups.

6. Indian Trust Assets: No Indian Trust Assets occur within the Contractors' service areas. Therefore, no direct or indirect impacts to Indian Trust Assets would occur.

The AWTP would allow CVP water to continue to be beneficially used in accordance with Reclamation's water rights permits as in the past.

RECLAMATION

Managing Water in the West

FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACTS FOR THE ACCELERATED WATER TRANSFER PROGRAM – FRIANT AND CROSS VALLEY CONTRACTORS 2006-2010

Introduction

This Supplemental Environmental Assessment (SEA) provides additional information and analysis for an expansion of Environmental Assessment (EA-05-92) *Accelerated Water Transfers and Exchanges Central Valley Project Contractors Friant Division 2006-2010* and is hereby incorporated by reference into this document. This SEA does not replace EA-05-92, instead the SEA adds to the EA.

Proposed Action

Reclamation prepared EA-05-92 under the National Environmental Policy Act (NEPA) to analyze the effects of an accelerated water transfer program (AWTP) on the quality of the human environment, analyzing up to 150,000 acre-feet of water for water year 2006 -2010. Reclamation has subsequently been made aware that additional amounts of water, resulting from current hydrological conditions, are available for transfer. Moreover, approvals for transfers of more than 150,000 af in one water year have occurred in the past. Reclamation therefore proposes to increase the amount of water covered by the AWTP to 255,000 acre-feet for water years 2006-2010. The conditions, specifics, and exceptions of the AWTP remain as described in EA-05-92. Water districts will not be receiving Central Valley Project (CVP) water in excess of their CVP contract amounts. Reclamation also prepared a Supplemental Environmental Assessment which analyzed up to 255,000 acre-feet of water transferred among Friant and Cross Valley CVP Contractors.

Purpose and Need

Reclamation has identified a need, as described in EA-05-92 to transport, relocate, or shift CVP water supplies to meet irrigation demand or municipal and industrial (M&I) requirements. The purpose of the AWTP is to implement an accelerated water transfer program to facilitate efficient water management through water transfers and/or exchanges between Friant and Cross Valley Contractors. Approvals for transfers under EA-05-92 have already reached the original 150,000 acre feet of water in the first month of the water year. The water year runs from March 1 to February 28 the following year.

ALTERNATIVES

Alternative 1

Reclamation has identified two reasonable alternatives to the proposed action, in addition to the No Action Alternative required by NEPA.

No Action Alternative

Under the No Action Alternative, Reclamation would not increase the amount of water covered by AWTP to 255,000 acre feet for water years 2006-2010. The current coverage for 150,000 acre feet would remain in place. This alternative corresponds with the Preferred Alternative in EA-05-92.

Alternative 1

This is the Preferred Alternative, and the proposed action

Alternative 2

Under this alternative, Reclamation would increase the amount of water covered by the 2006-2010 AWTP to some amount less than the 255,000 af proposed. As there are 149,999 possible permutations of this alternative, Reclamation has chosen to use the middle range (225,000) as the basis for alternative analysis.

AFFECTED ENVIRONMENT

The incorporated by reference documents @A-05-92) included physical resources (e.g. groundwater, biological, and surface water supplies) as well as the composition of the contractors; this SEA defers to that document for resources considered and environment described.

TRANSFERS AND EXCHANGES

Water districts make decisions to transfer and exchange water for a variety of reasons related to efficient and beneficial use of CVP water, and good water management. Transfers and exchanges of surface water help to protect groundwater resources, as well as allowing groundwater basins to replenish, create partnerships amount water agencies, and enable district to meet the repayment requirements for the CVP.

ENVIRONMENTAL CONSEQUENCES

The No Action Alternative was analyzed in EA-05-92.

Under Alternatives 1 and 2 any impacts are expected to be similar in both alternatives and of such a short duration that they will be minor in both context and intensity. Reclamation has re-examined the analysis contained in EA-05-92 for consequences on the environment as a result of the AWTP, and has determined that the analysis is sufficient in scope to include an increased AWTP of up to 255,000 af. Under that analysis there would be no major changes to any resources or quality on the human environment as a result of the Preferred Alternative or Alternative 2.

No additional consultations or coordination is required beyond what has been completed to date.